Fig. 1

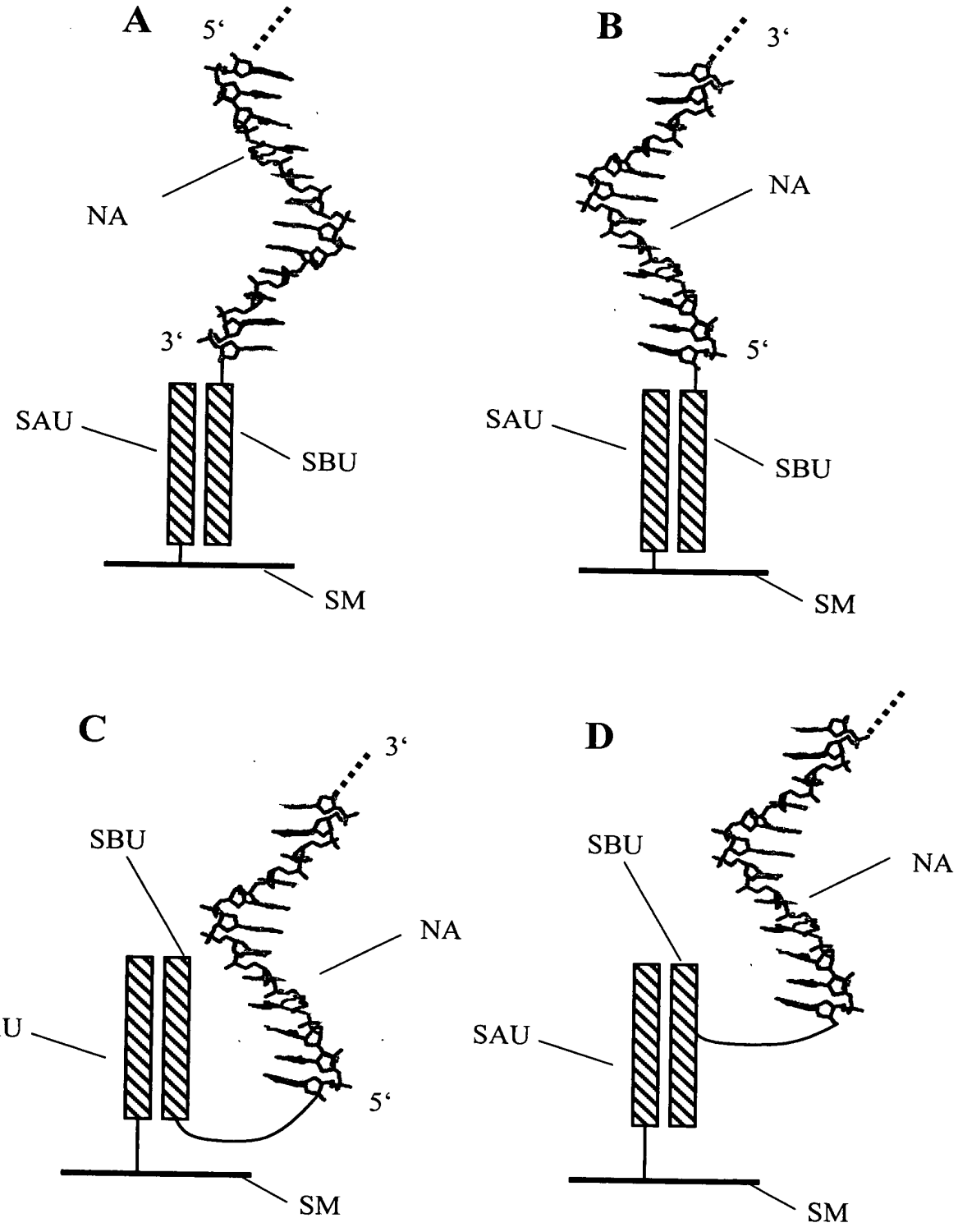

A
5'
NA
3'
SAU
SBU
SM
B
3'
NA
5'
SAU
SBU
SM
C
3'
SBU
NA
SAU
5'
SM
D
SBU
NA
SAU
SM

Fig. 2

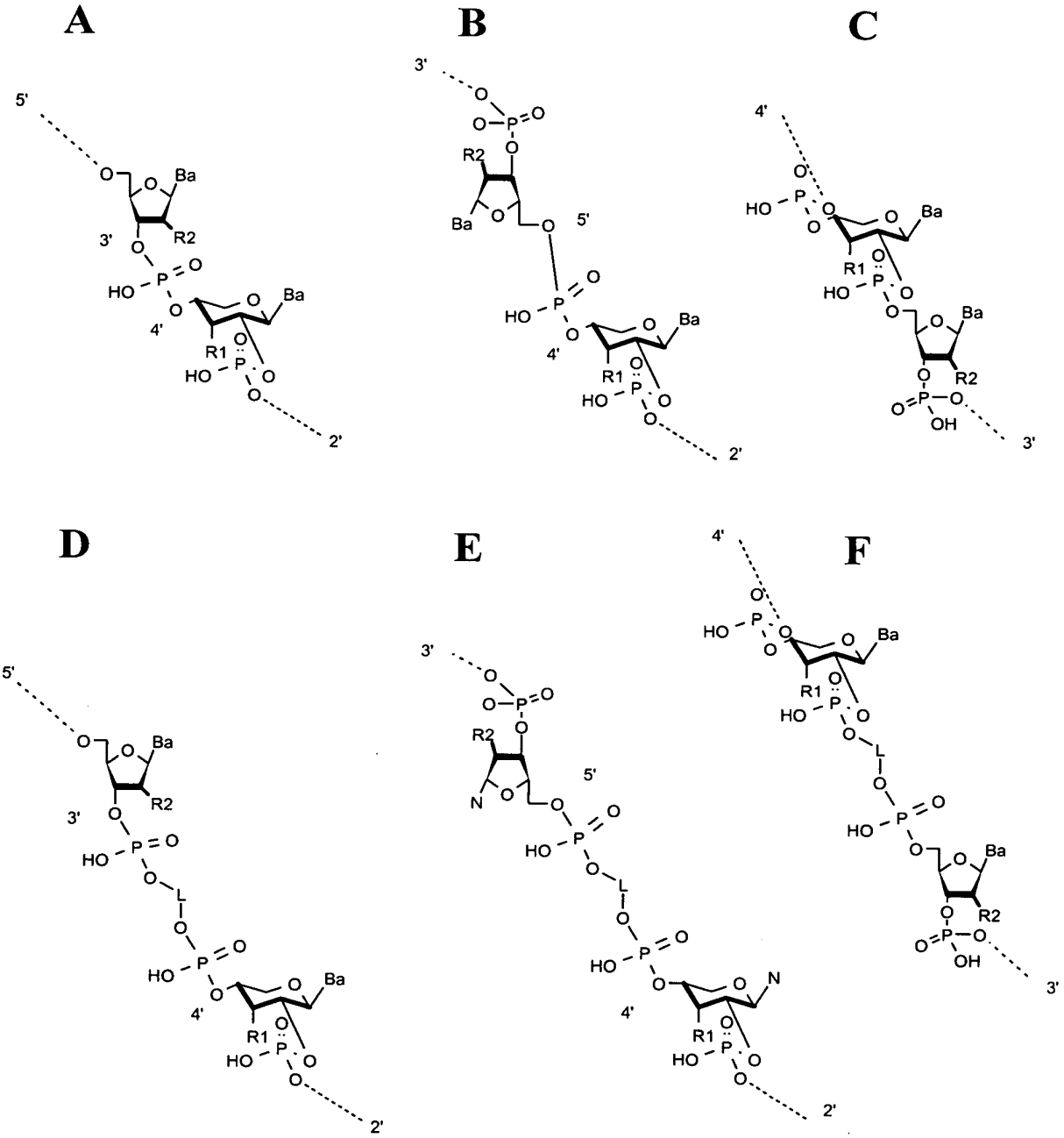


Fig. 3

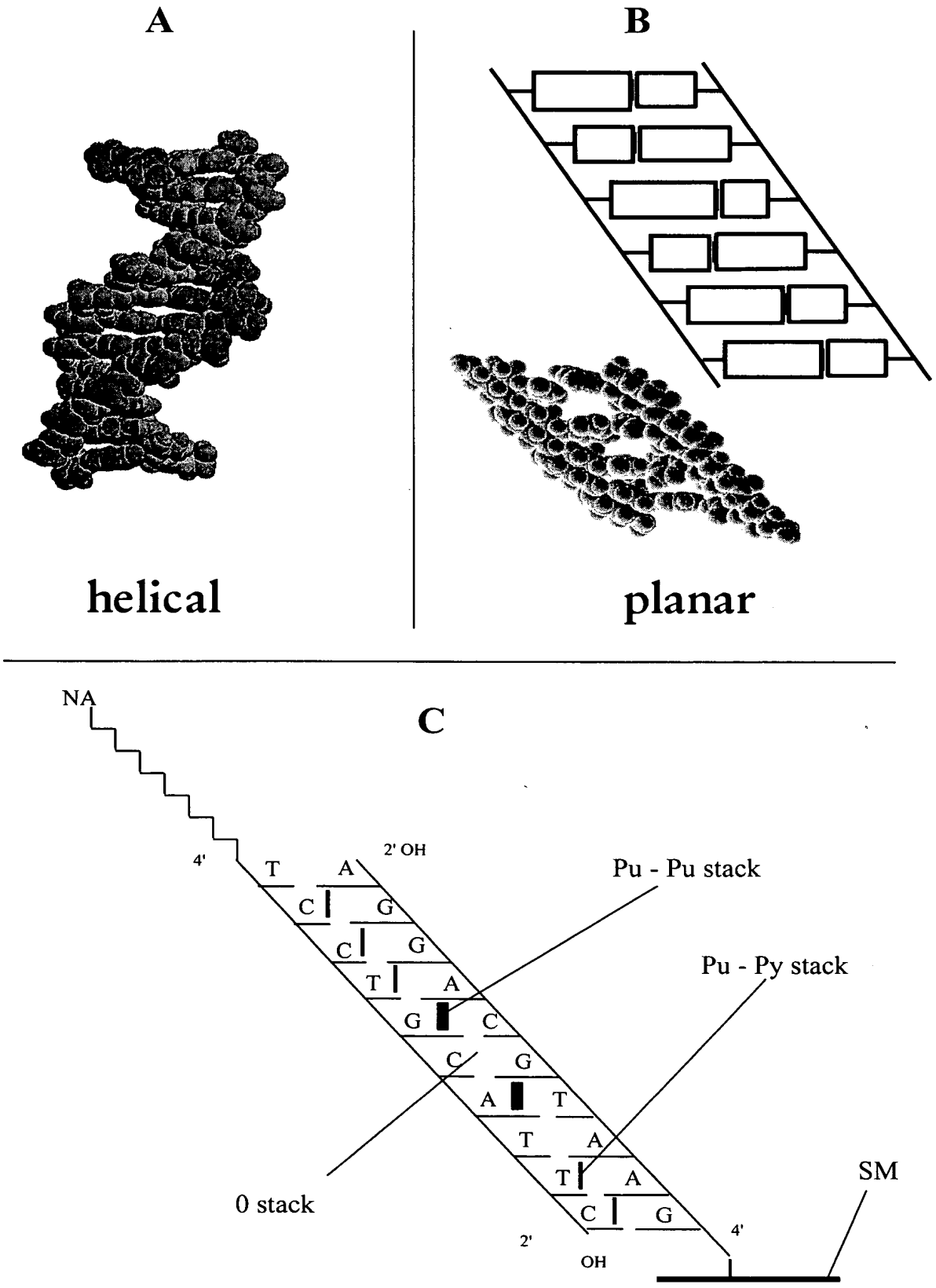

A
B
helical
planar
C
NA
4'
2' OH
T
A
C
G
C
G
T
A
G
C
C
G
A
T
T
A
T
A
C
G
2'
OH
4'
Pu - Pu stack
Pu - Py stack
0 stack
SM

Fig. 4

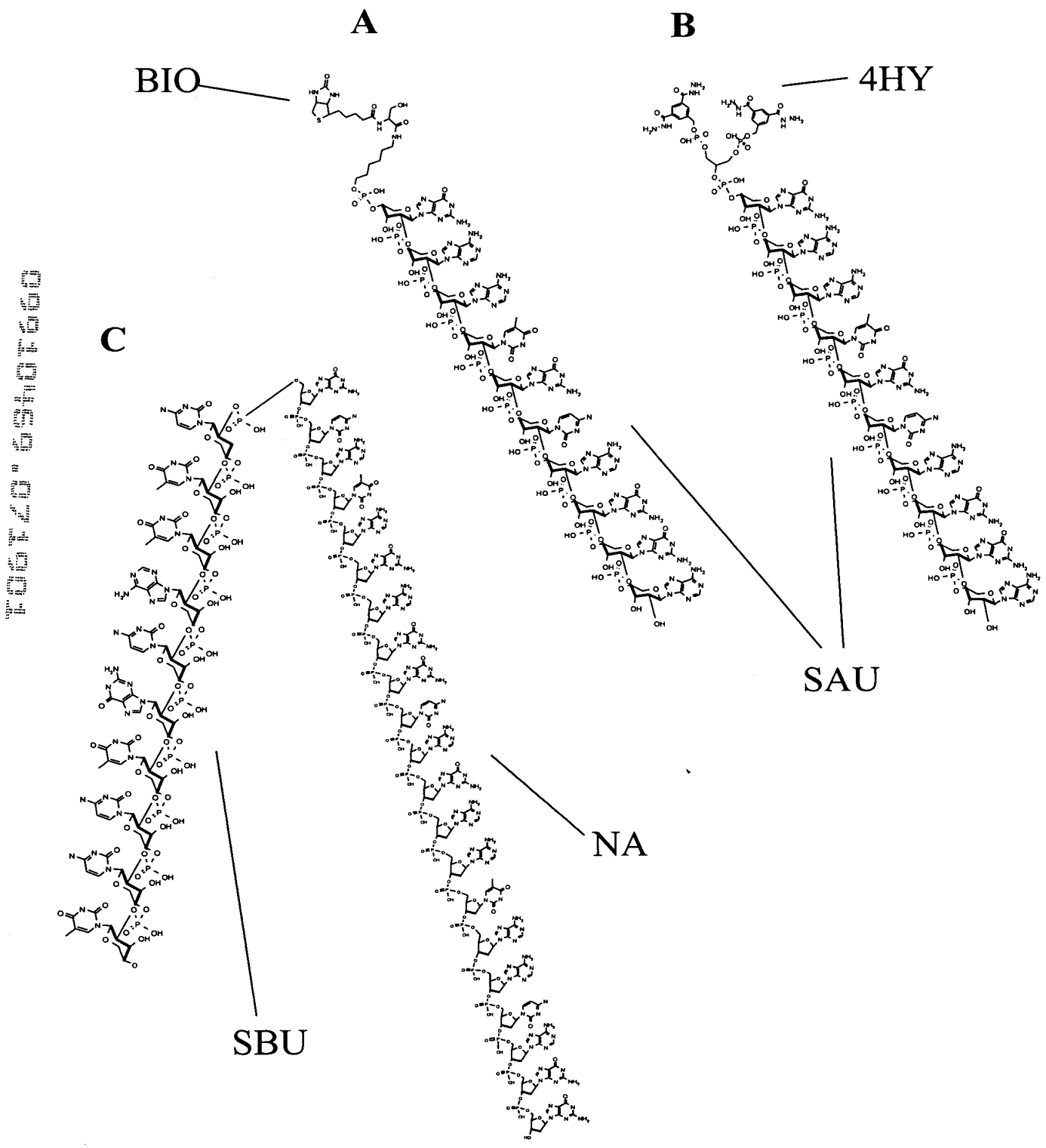


Fig. 5

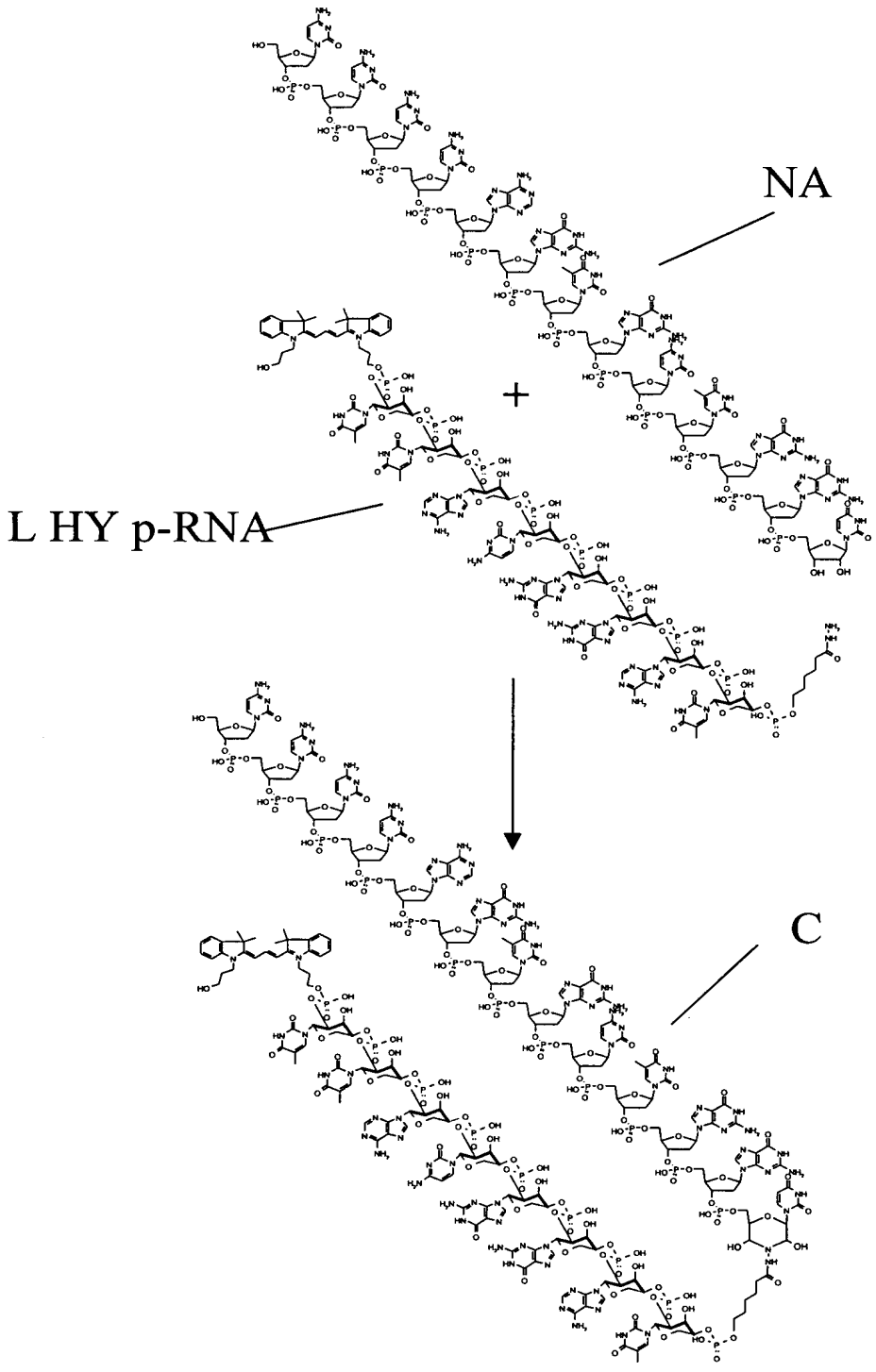


Fig. 6

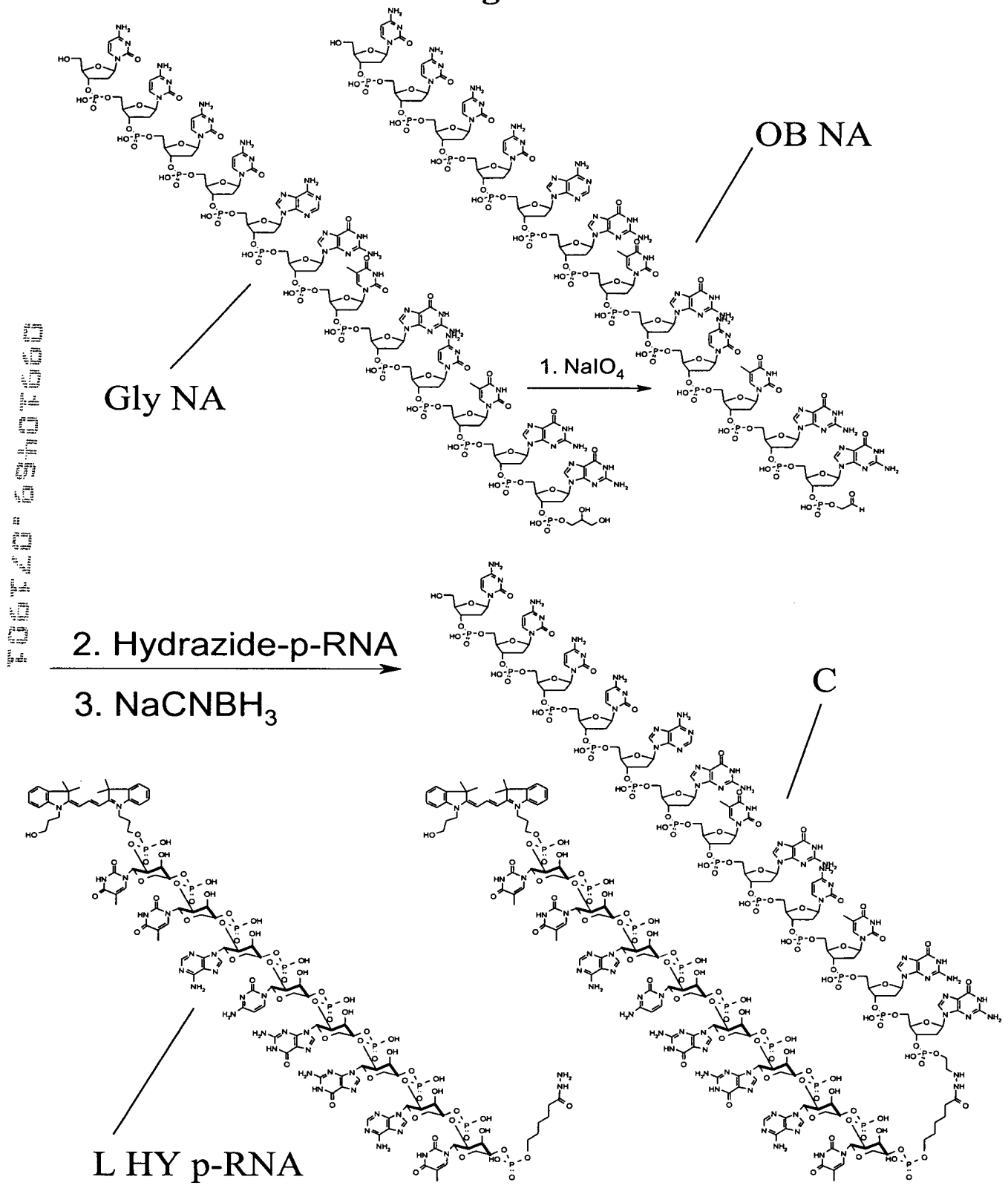


Fig. 7

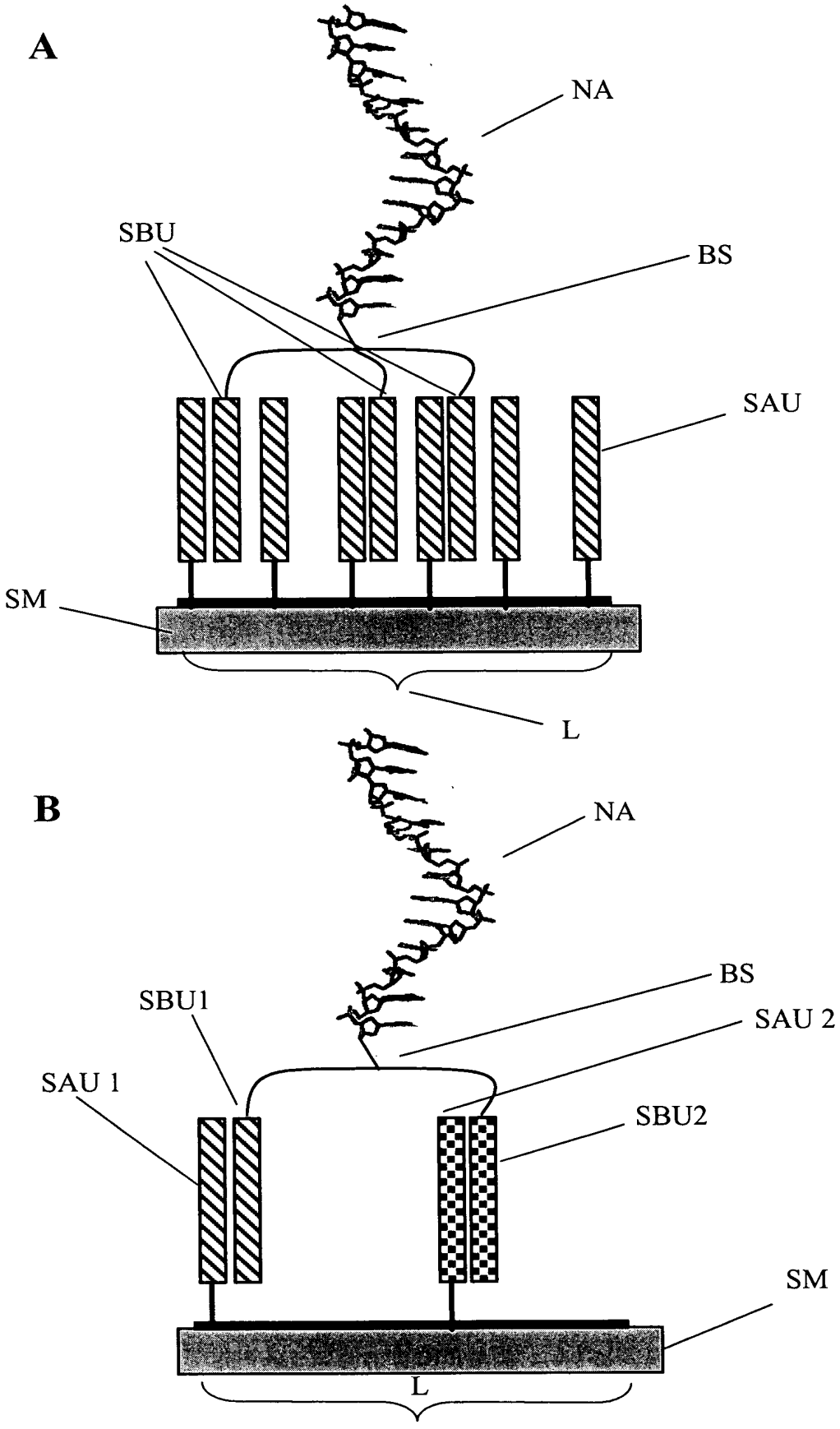


Fig. 8

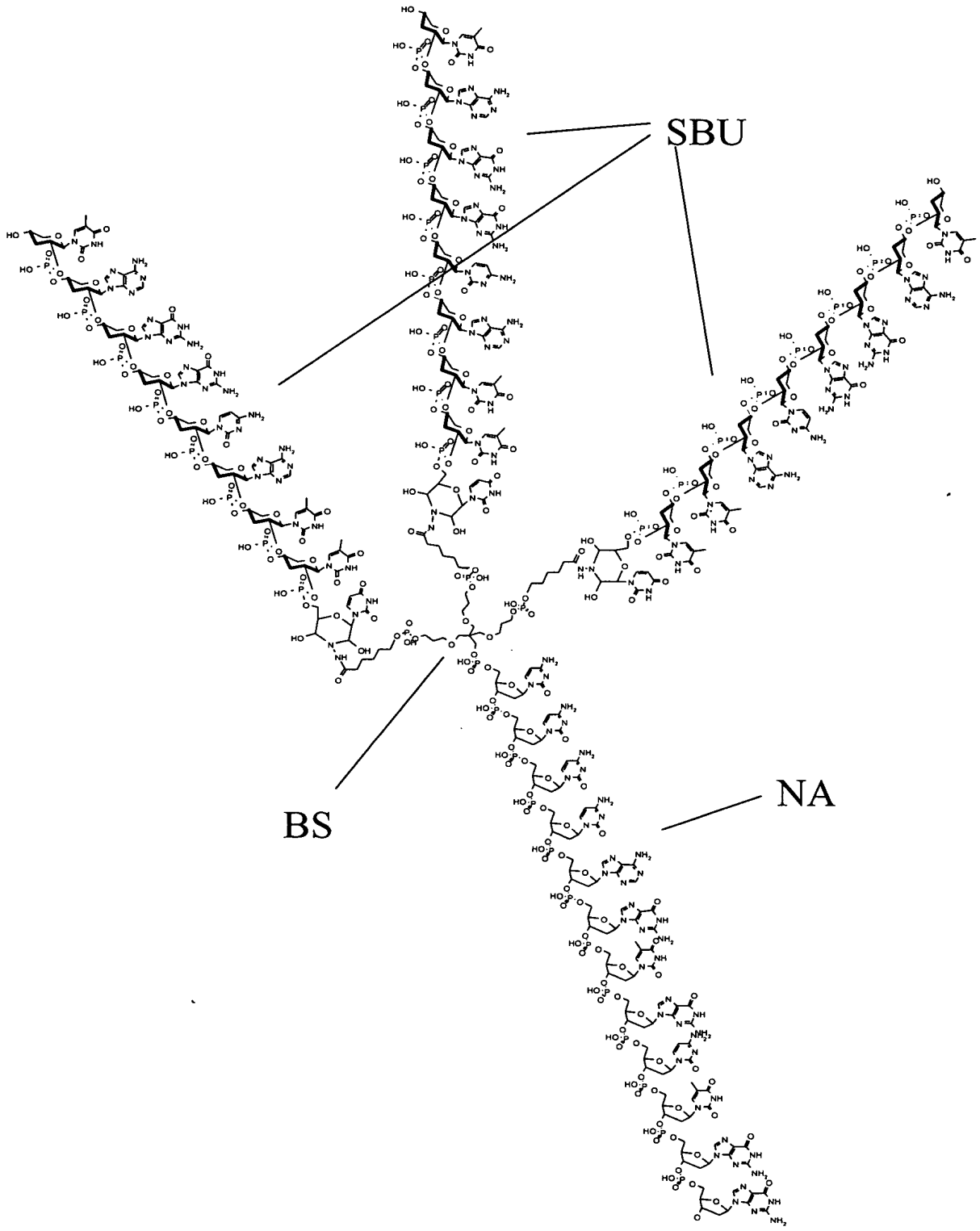


Fig. 9

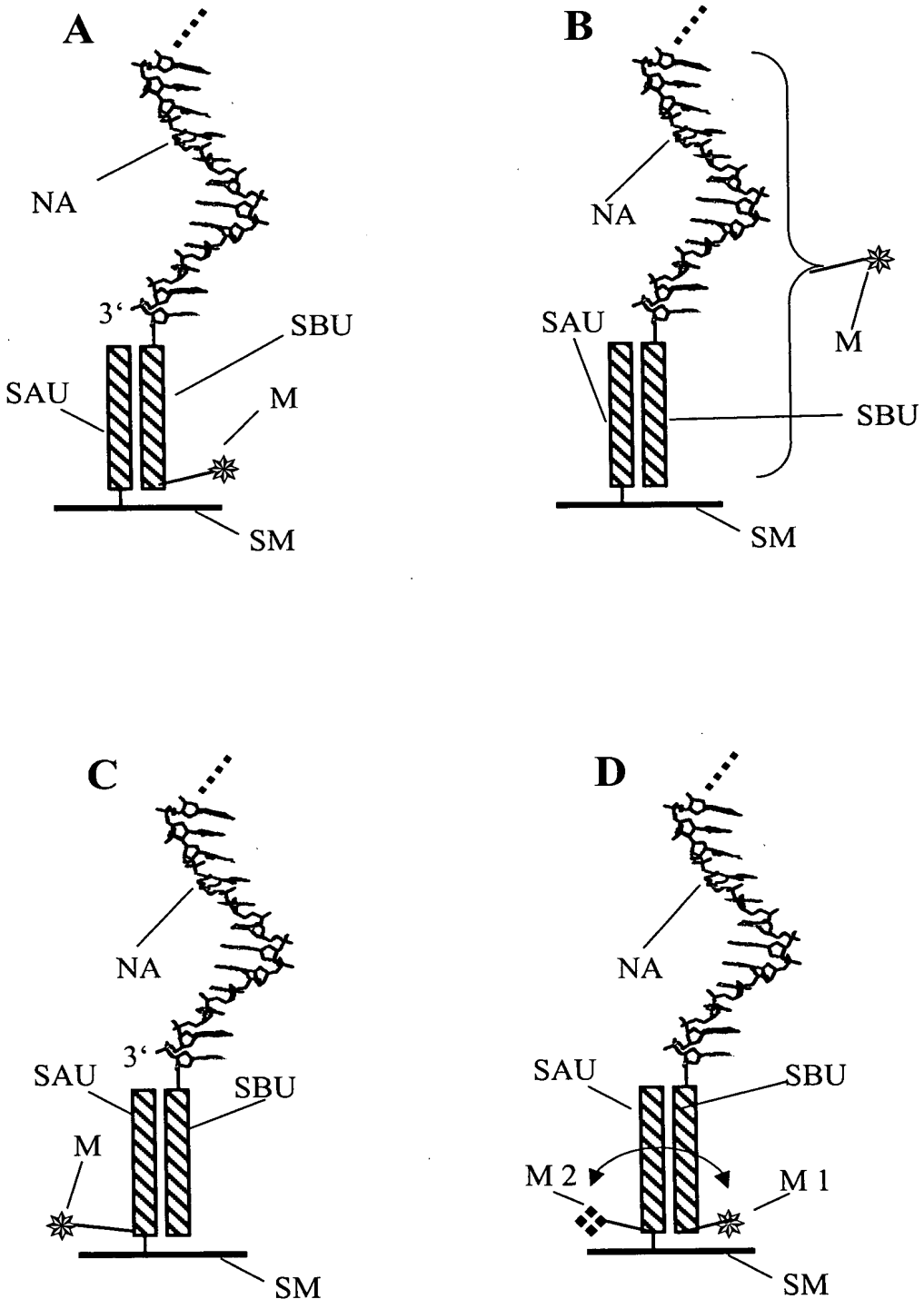

A
NA
3'
SBU
SAU
M
SM
B
NA
SAU
M
SBU
SM
C
NA
3'
SAU
SBU
M
SM
D
NA
SAU
SBU
M 2
M 1
SM

Fig. 10

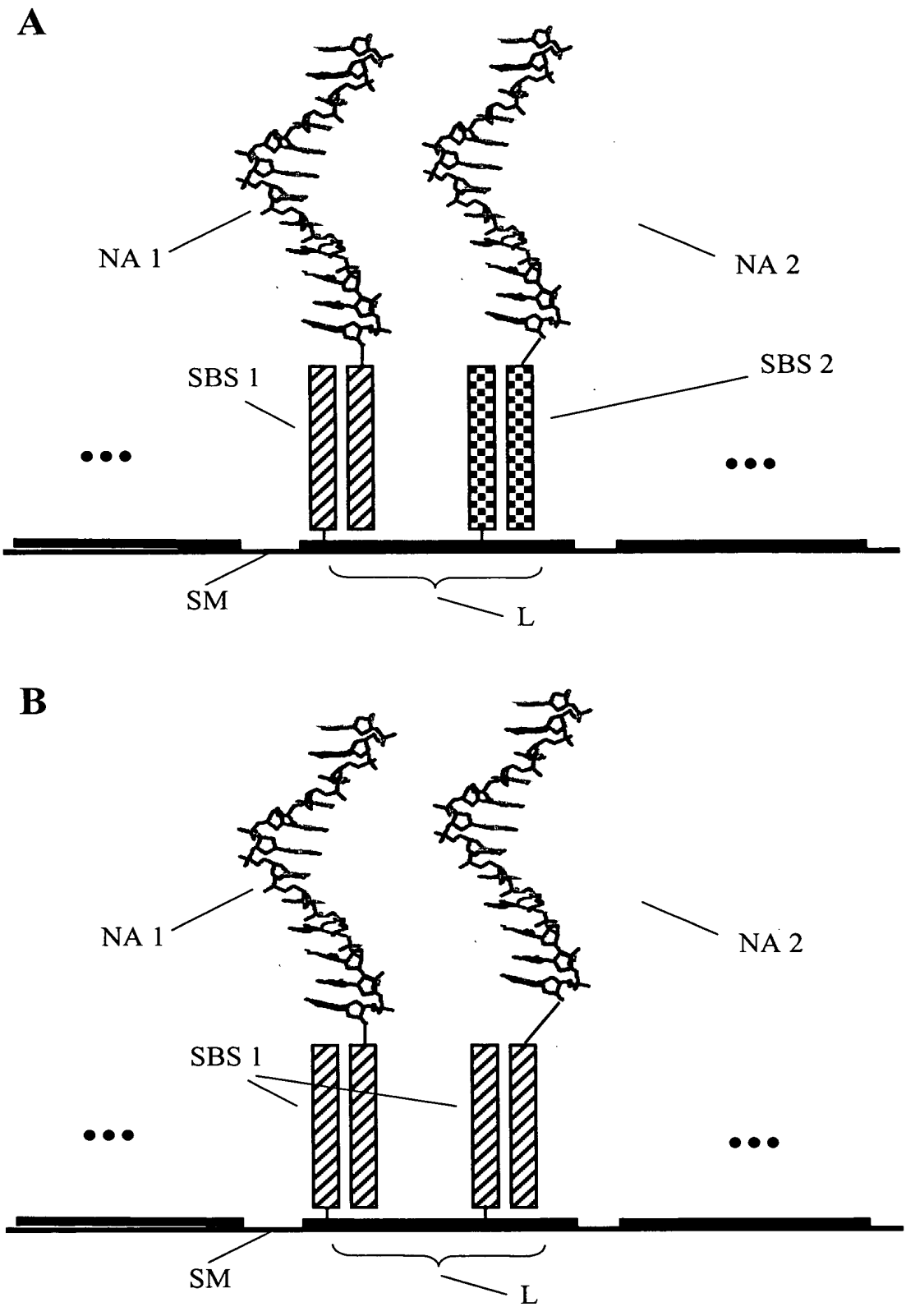
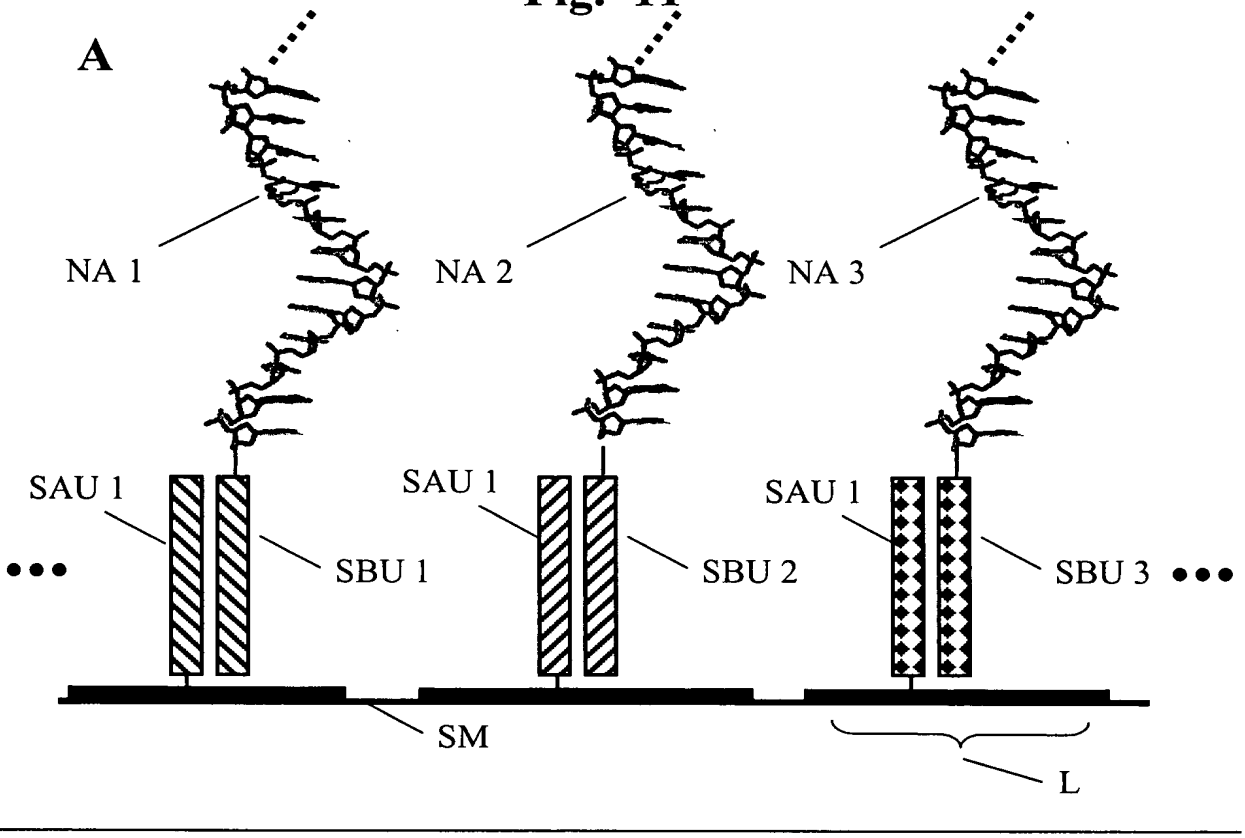


Fig. 11



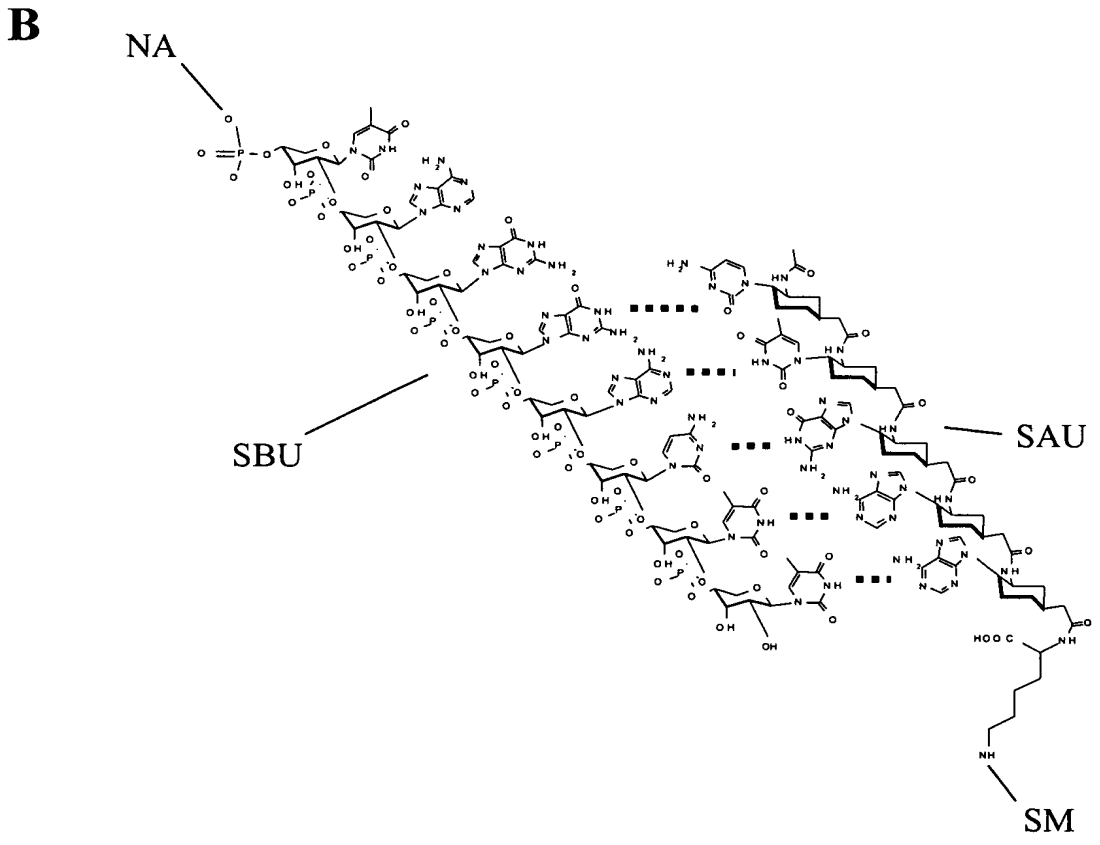
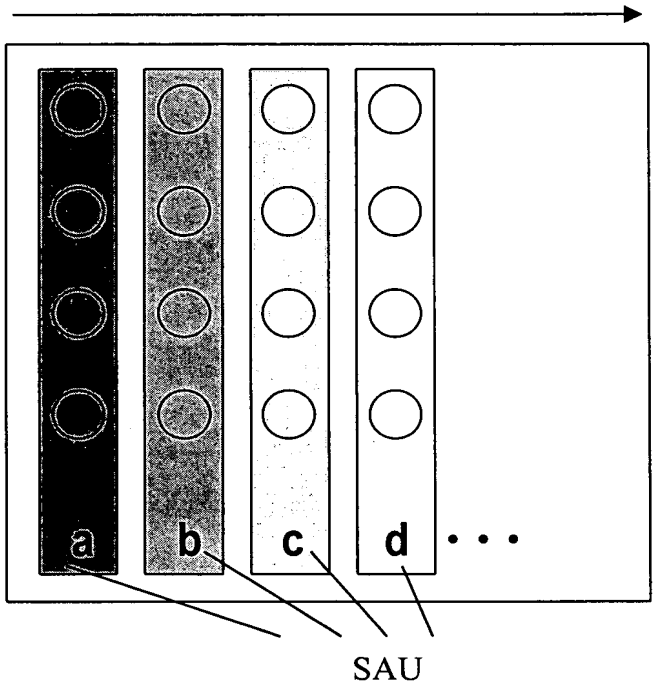


Fig. 12

A:



B:

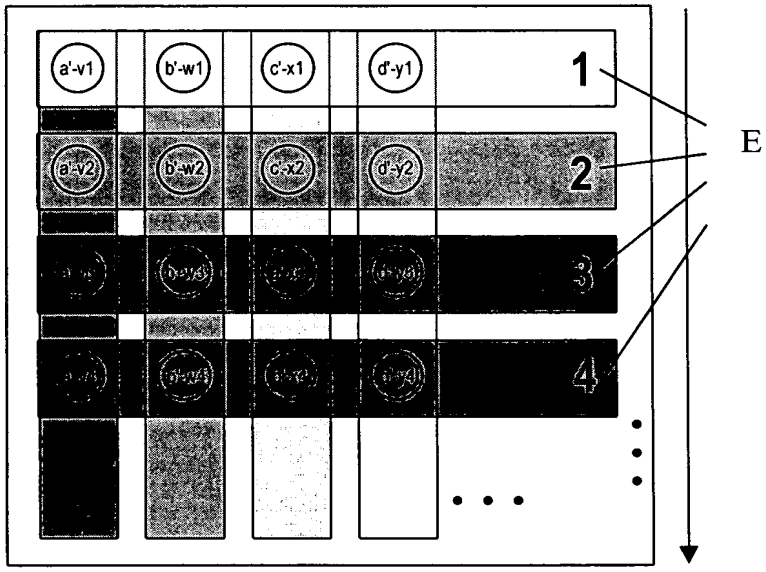
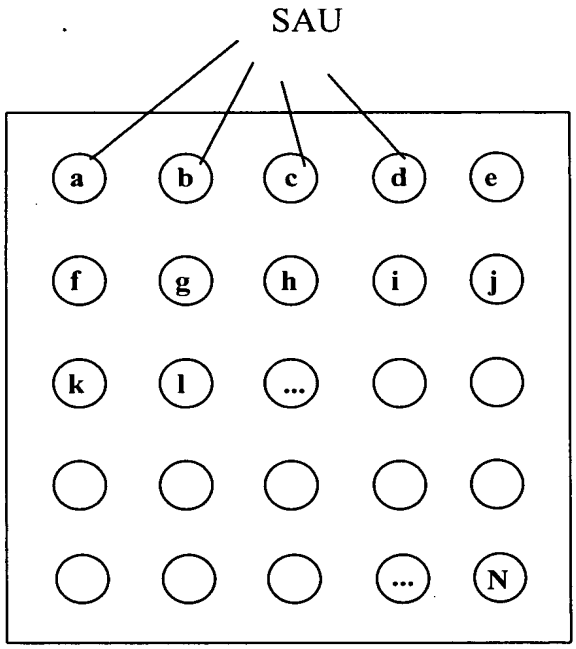


Fig. 13

A:



B:

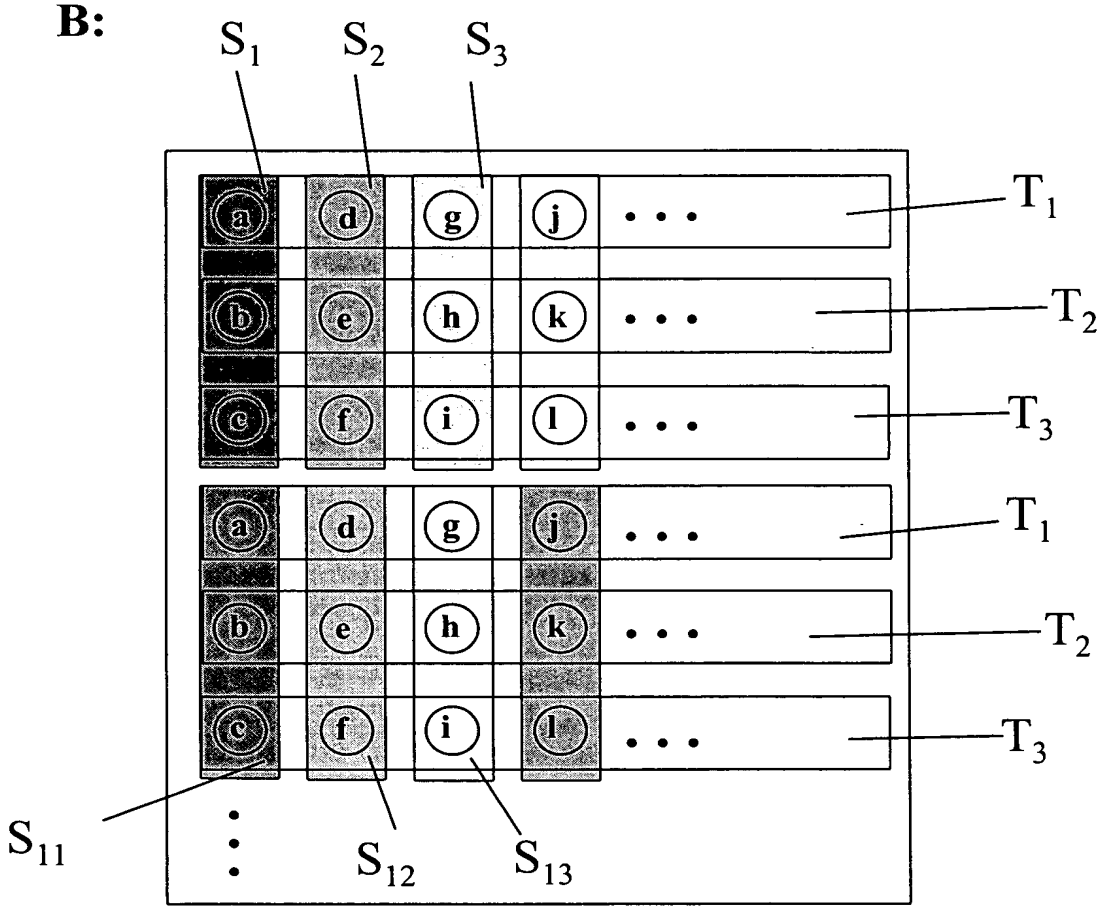


Fig. 14
Selective binding of SBS on SPR

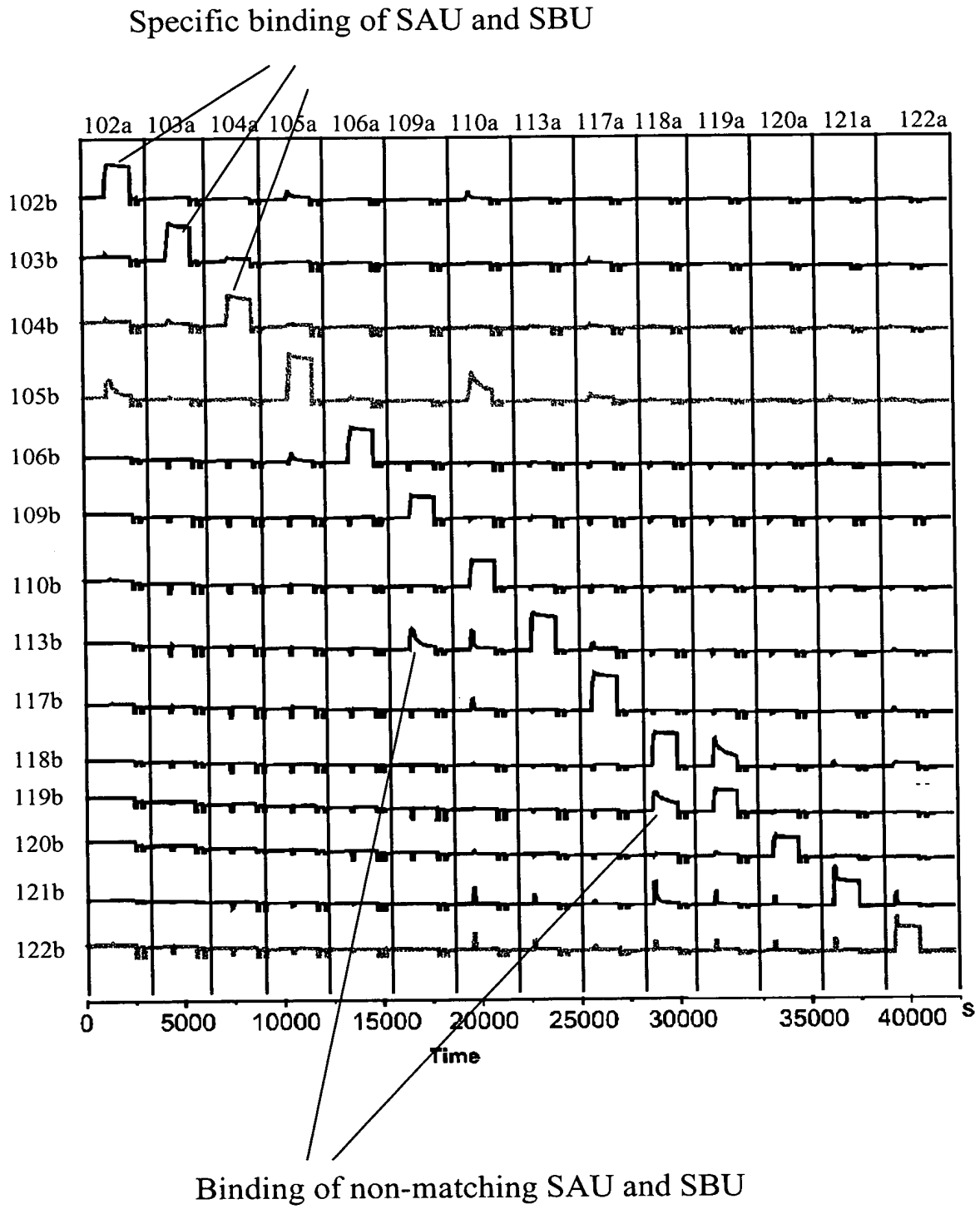


Fig. 15
Selective Binding of SBU and SAU on chip arrays

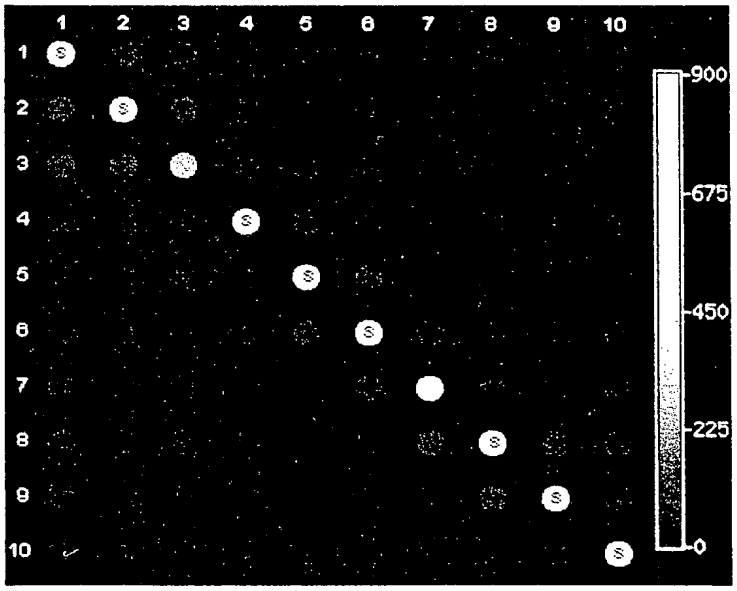


Fig. 16
Immobilization of conjugates on SPR chips

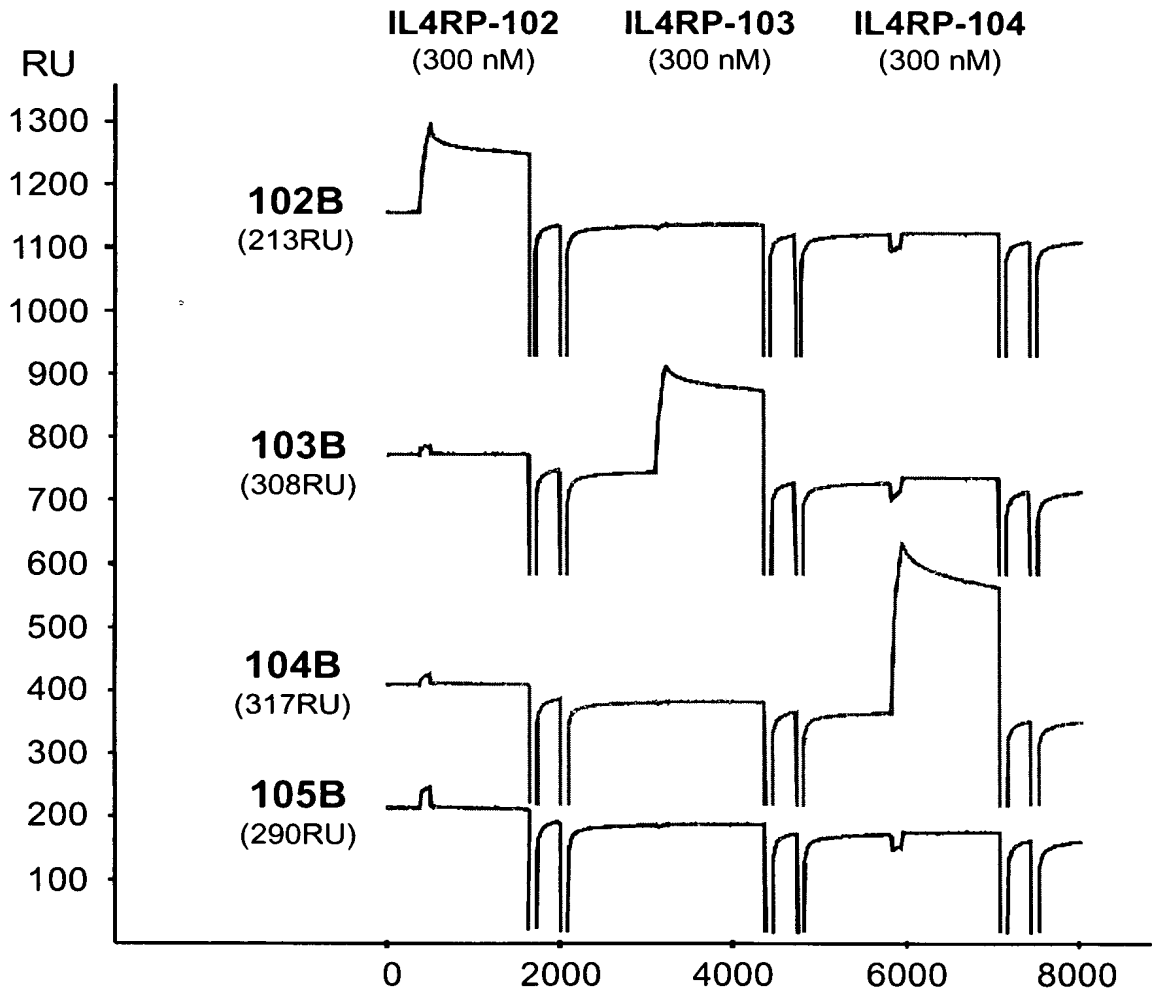


Fig. 17
Immobilization of conjugates on SPR chips and hybridization with complementary DNA

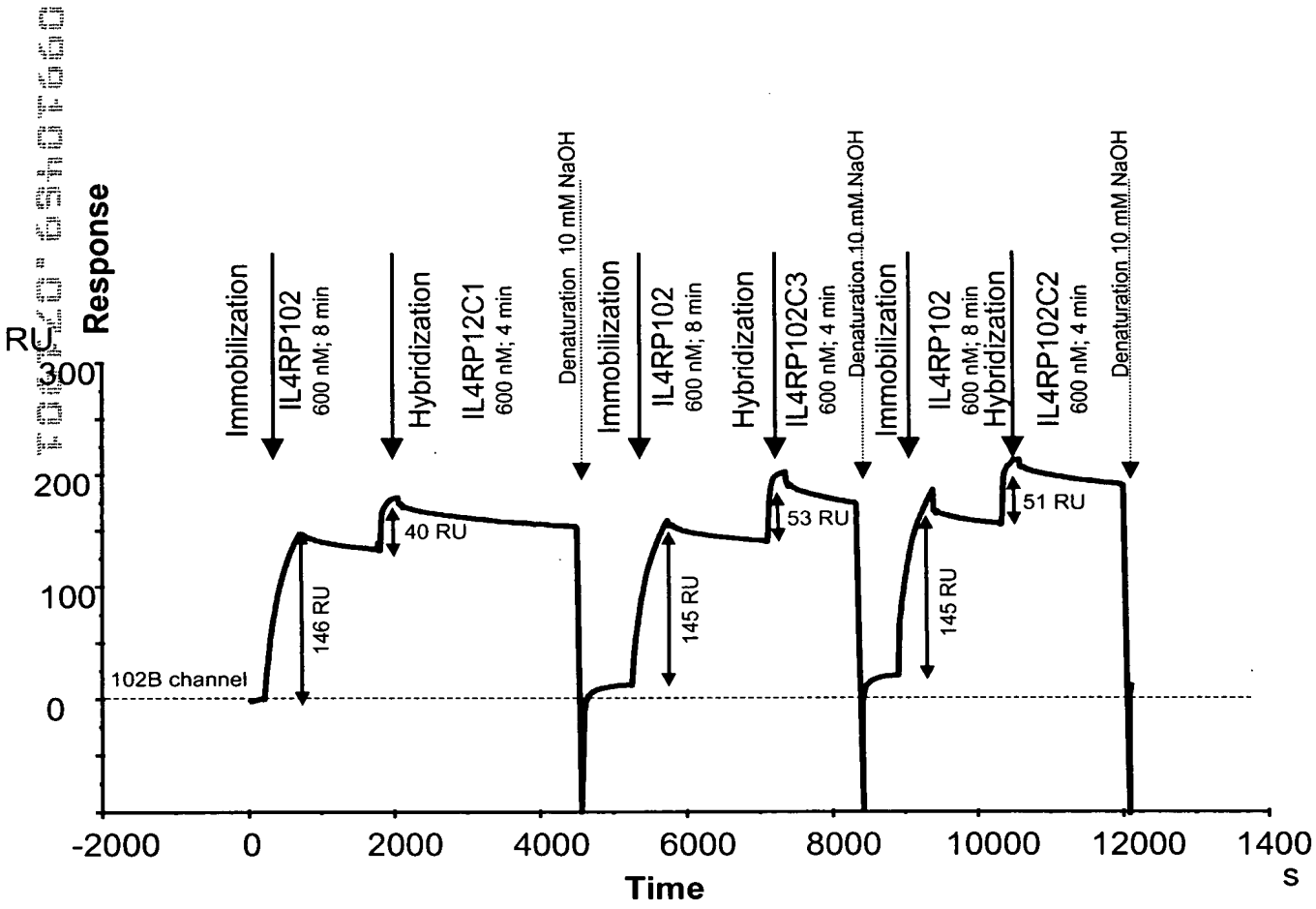
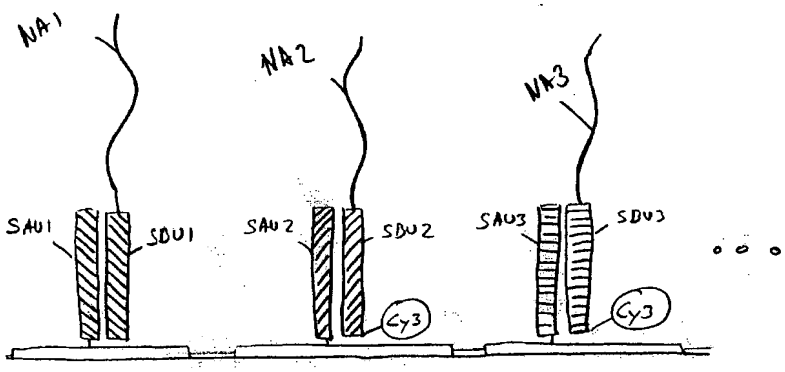
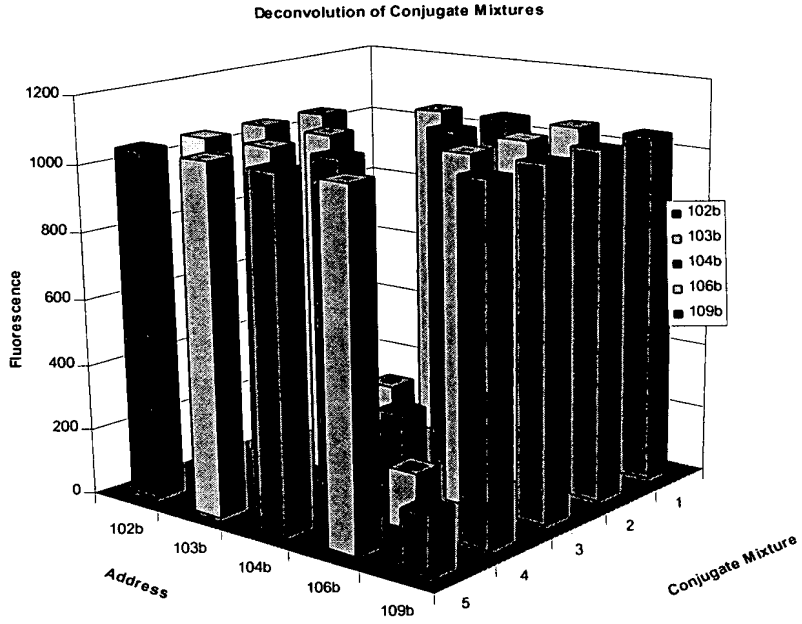


Fig. 18





	1	2	3	4	5
102b					
103b					
104b					
106b					
109b					

Fig. 19

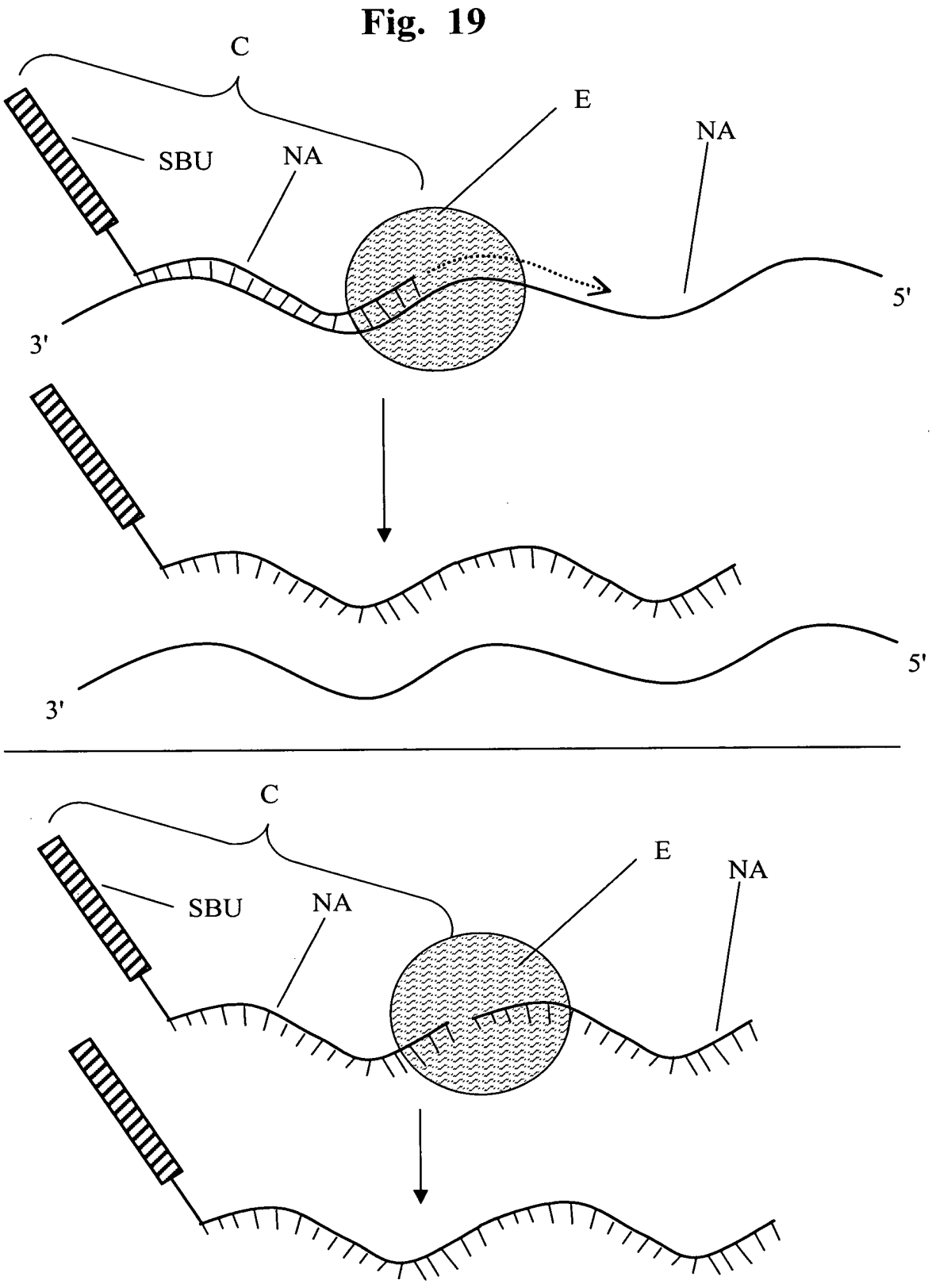


Fig. 20a

A

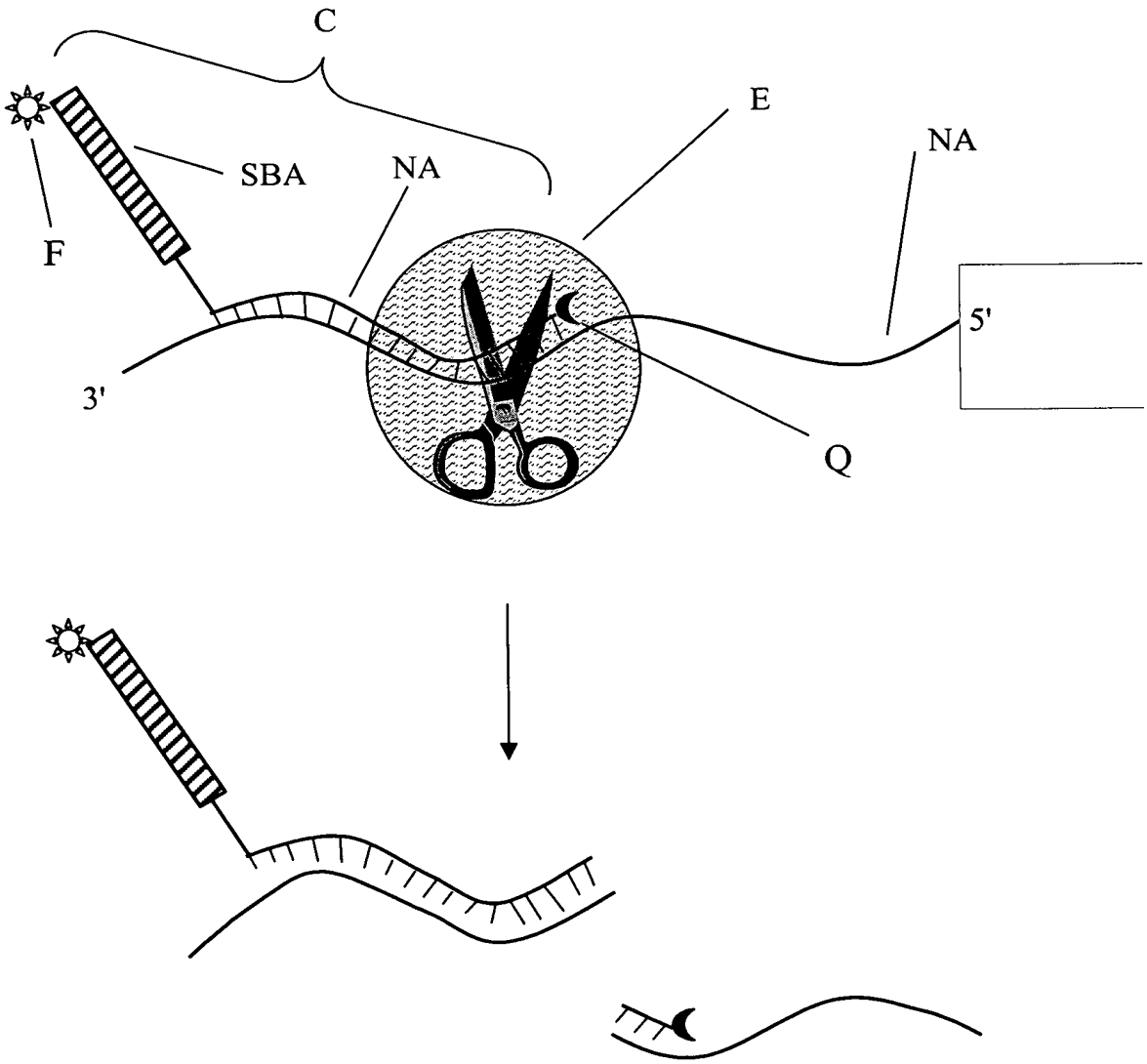


Fig. 20b

A

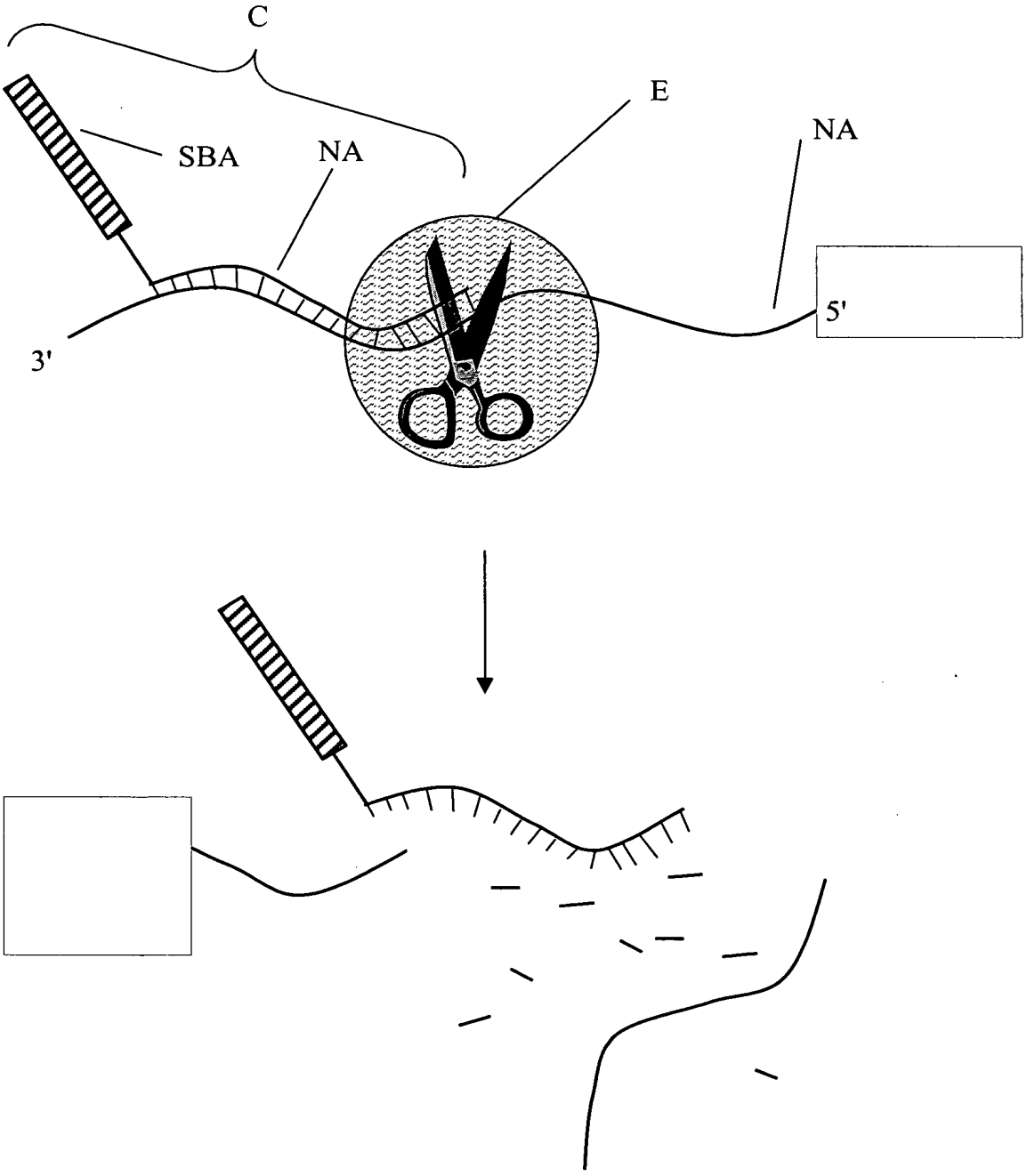


Fig. 21

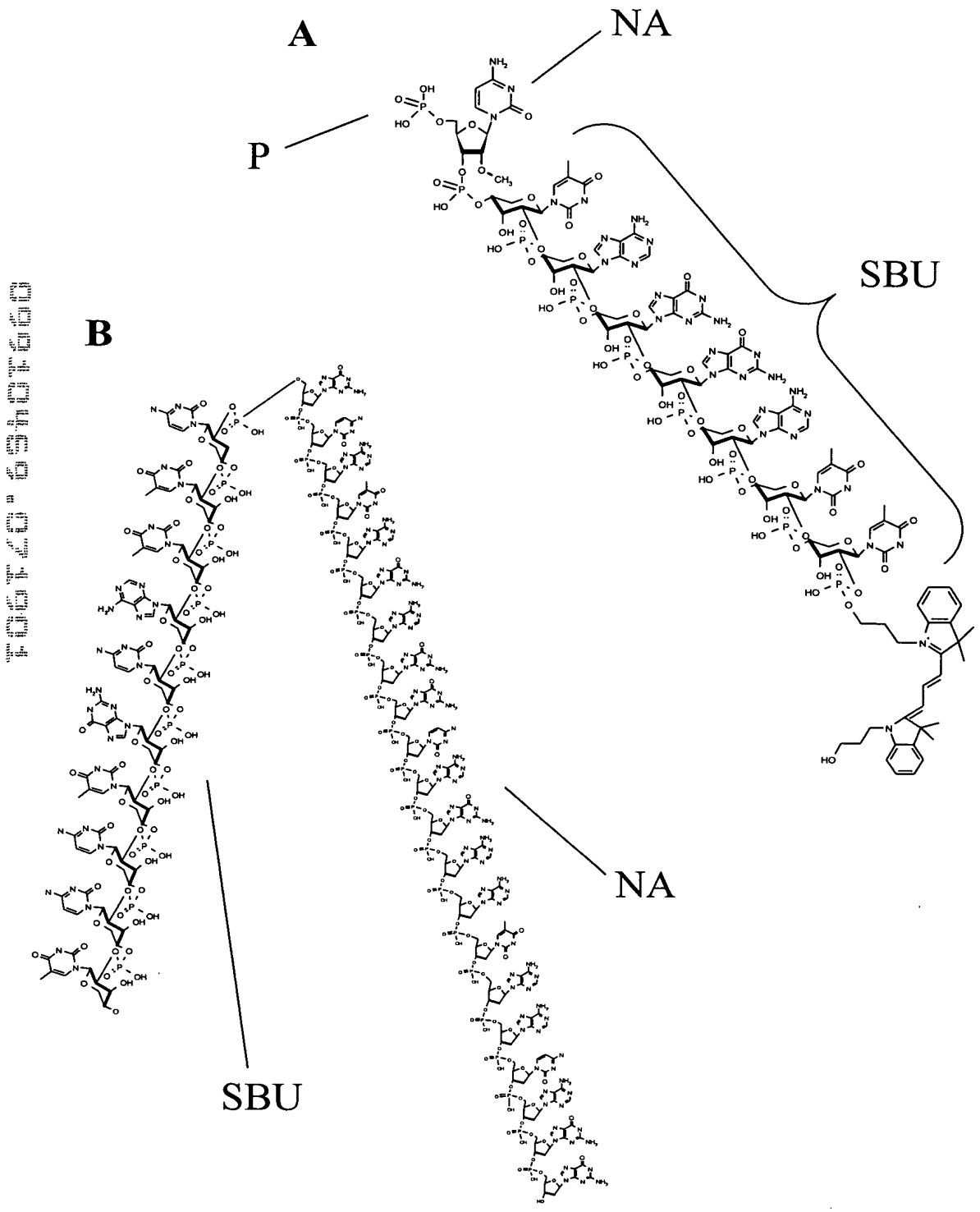
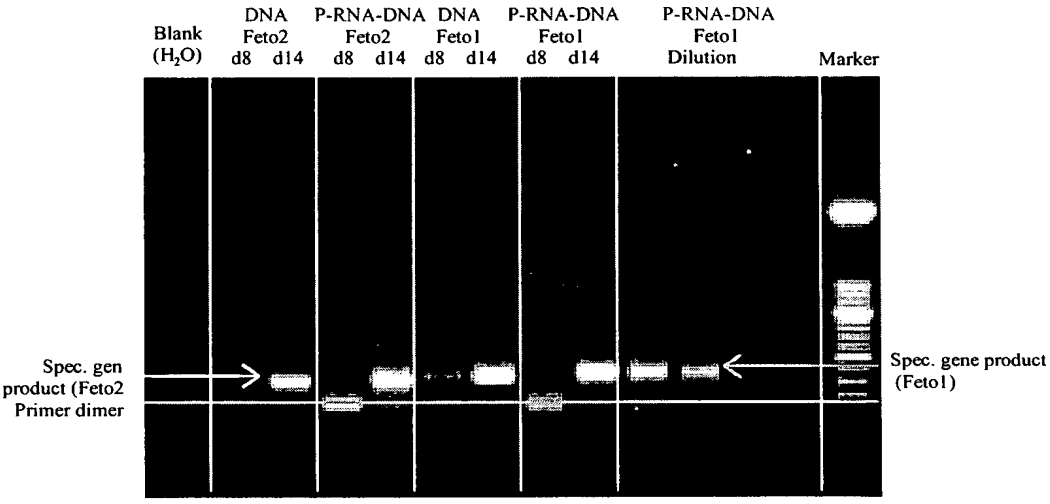


Fig. 22

A


Blank (H_2O)
DNA Feto2 d8 d14
P-RNA-DNA Feto2 d8 d14
DNA Feto1 d8 d14
P-RNA-DNA Feto1 d8 d14
P-RNA-DNA Feto1 Dilution
Marker
Spec. gen product (Feto2 Primer dimer
Spec. gene product (Feto1)

B

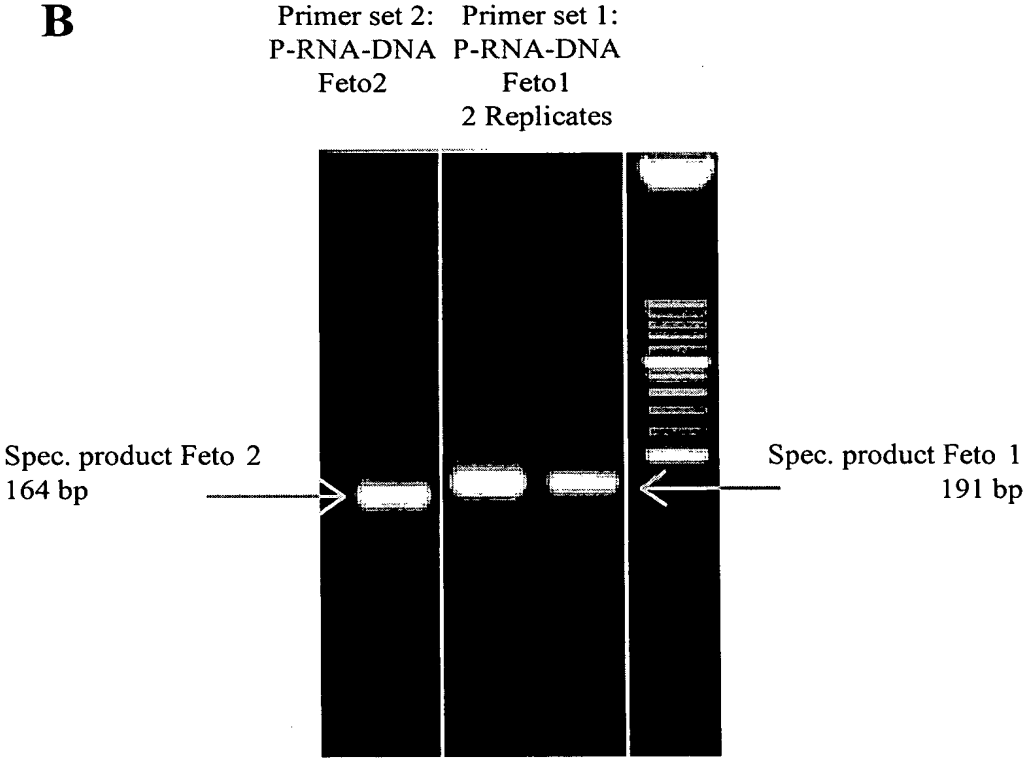

Primer set 2: P-RNA-DNA Feto2
Primer set 1: P-RNA-DNA Feto1
2 Replicates
Spec. product Feto 2 164 bp
Spec. product Feto 1 191 bp

Fig. 23

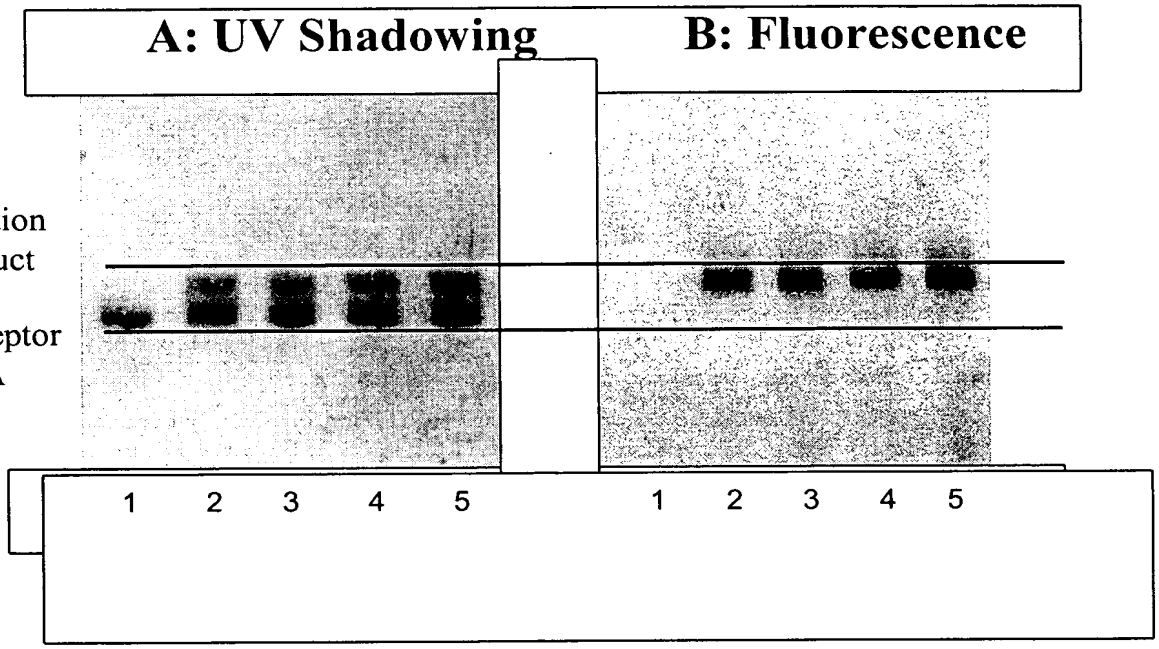


Fig. 24

Addressing of SBU to SAU
SDA Primers on same or different SBU

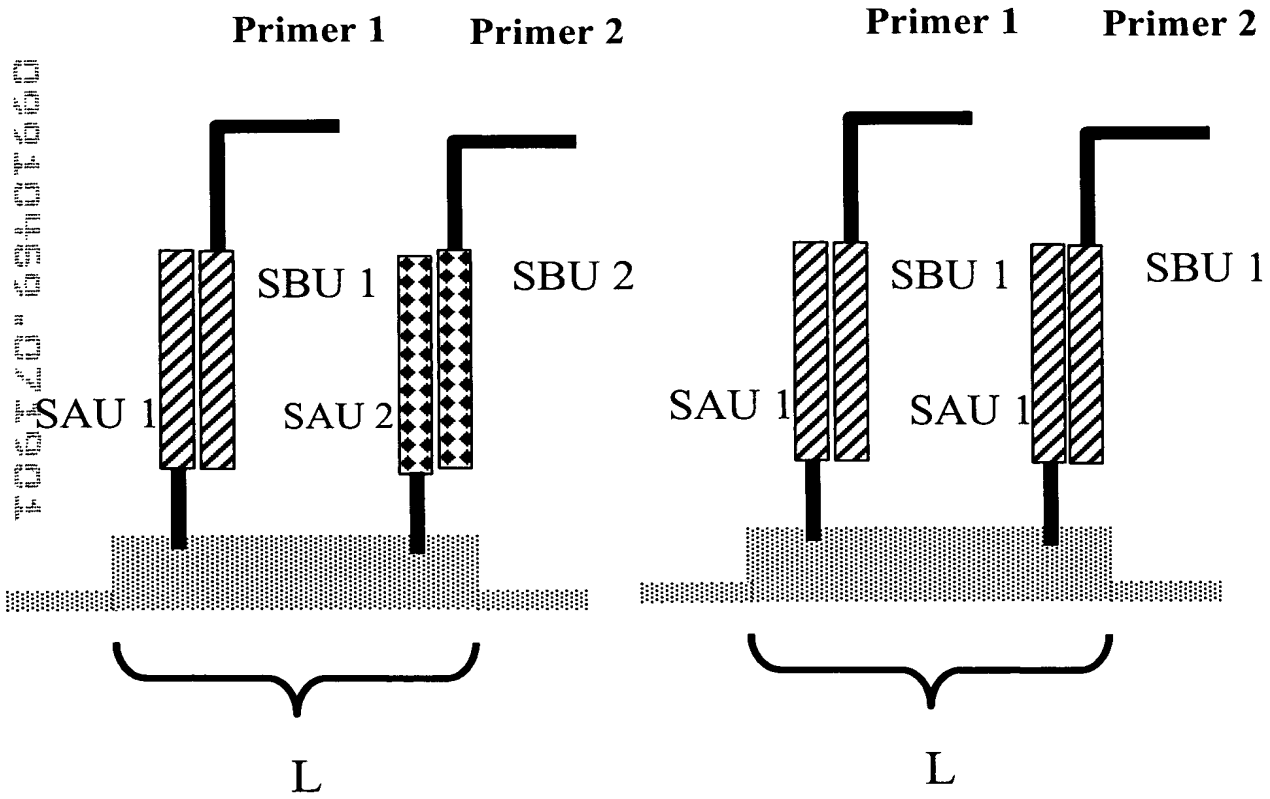


Fig. 25

Addressing of SBU to SAU
Both SDA primers on the same SBU

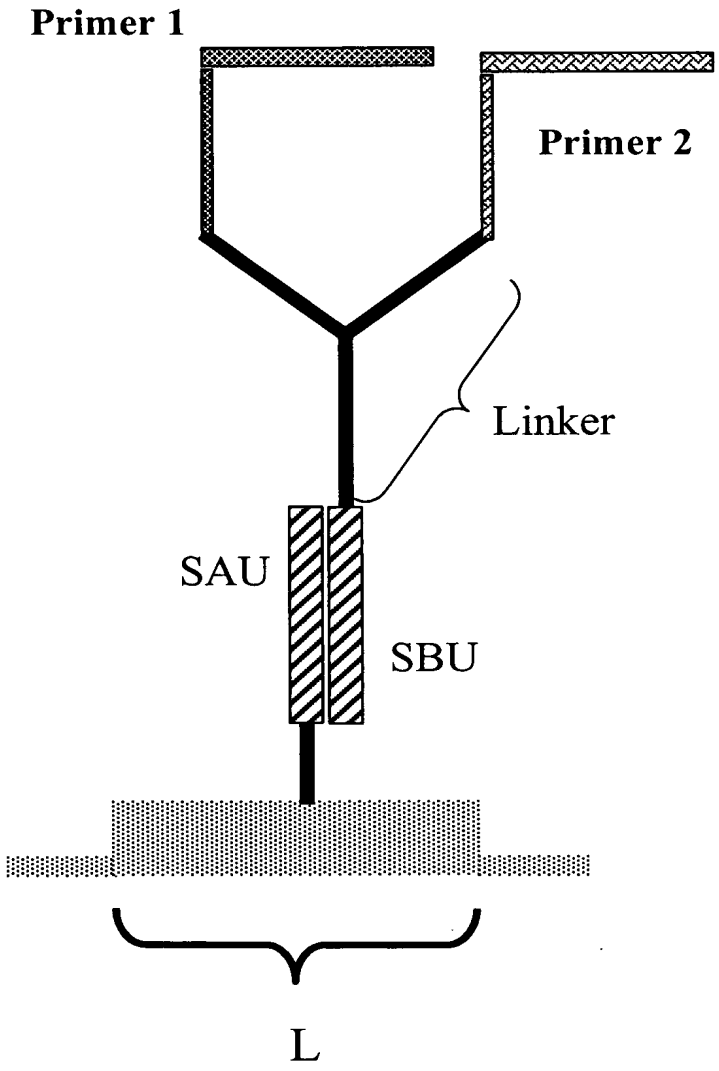


Fig. 26

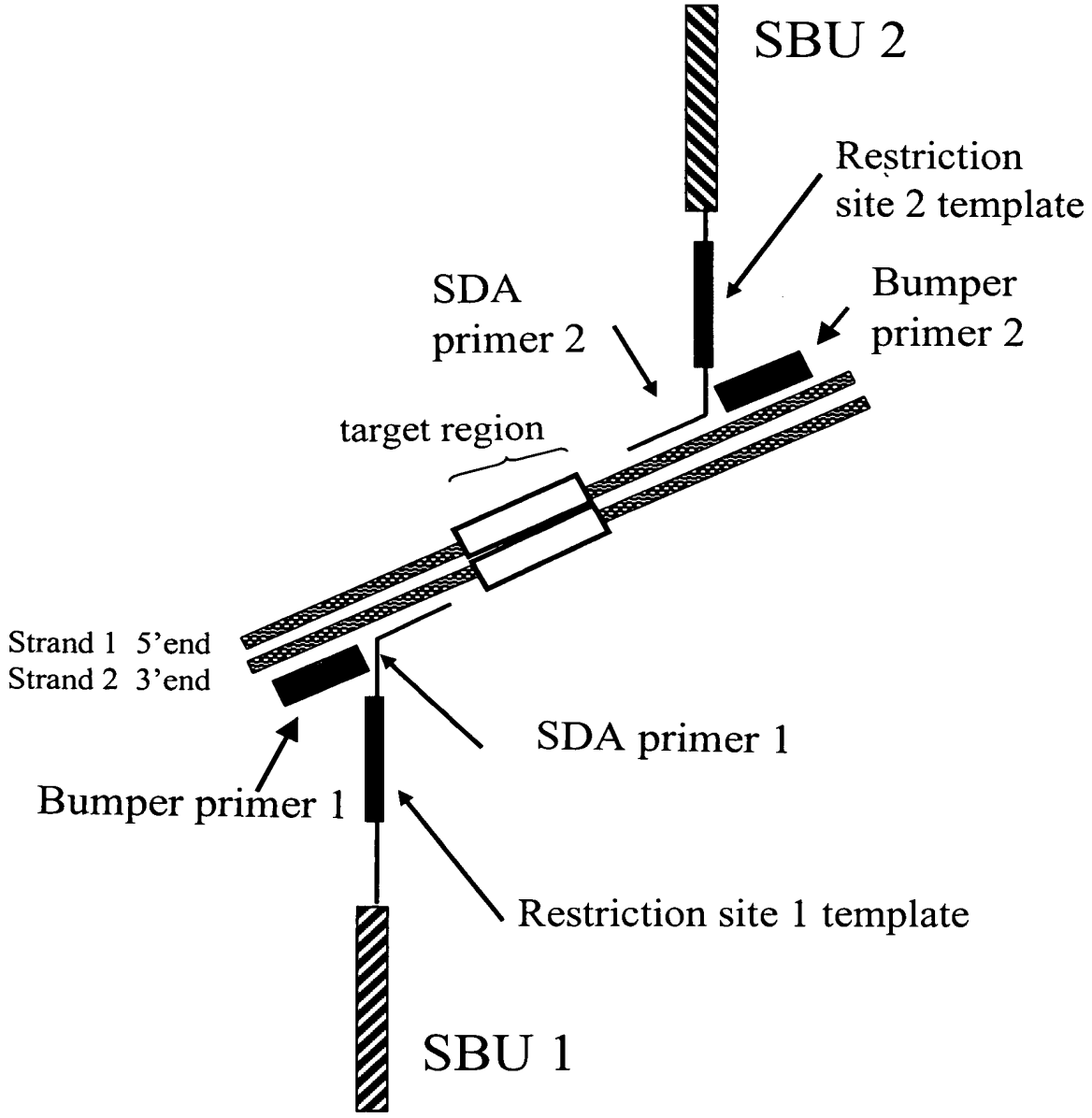
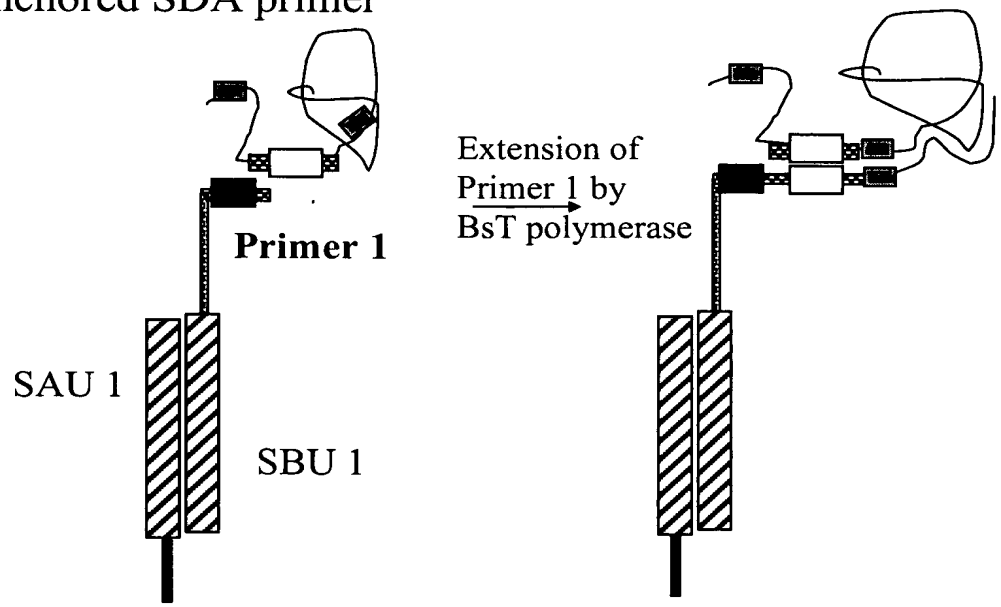

SBU 2
Restriction site 2 template
SDA primer 2
Bumper primer 2
target region
Strand 1 5'end
Strand 2 3'end
SDA primer 1
Bumper primer 1
Restriction site 1 template
SBU 1

Fig. 27a

Phase 1: Initiation

A. Copying of target onto SBU anchored SDA primer



B. Displacement of genomic DNA by extension from bumper primer 1.

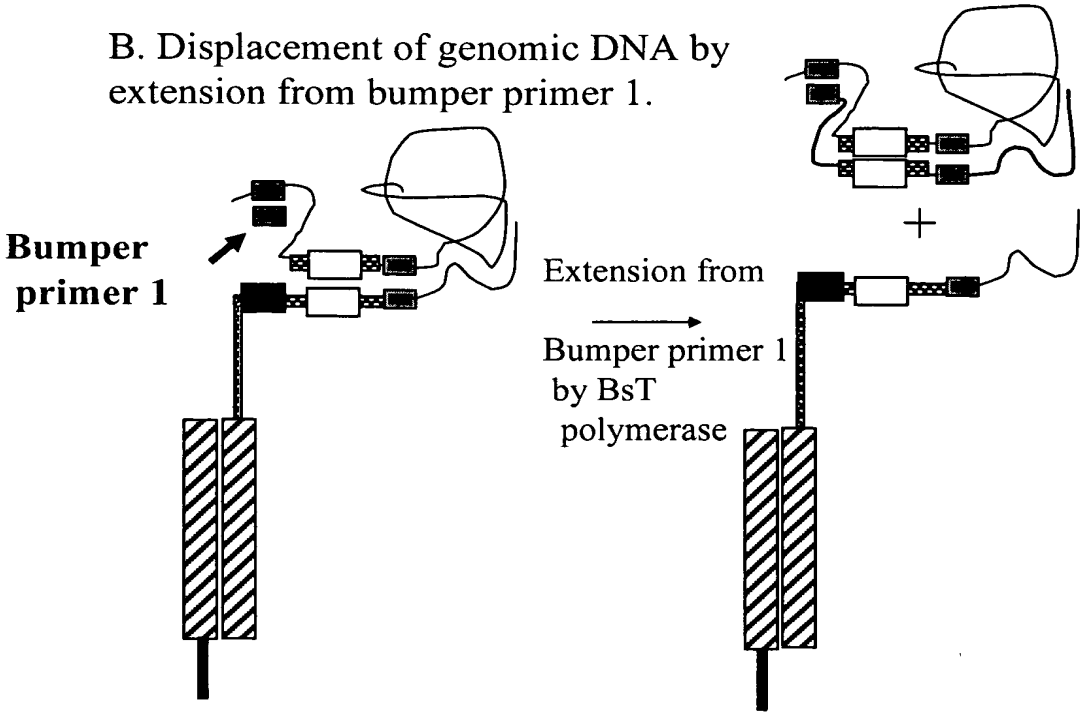
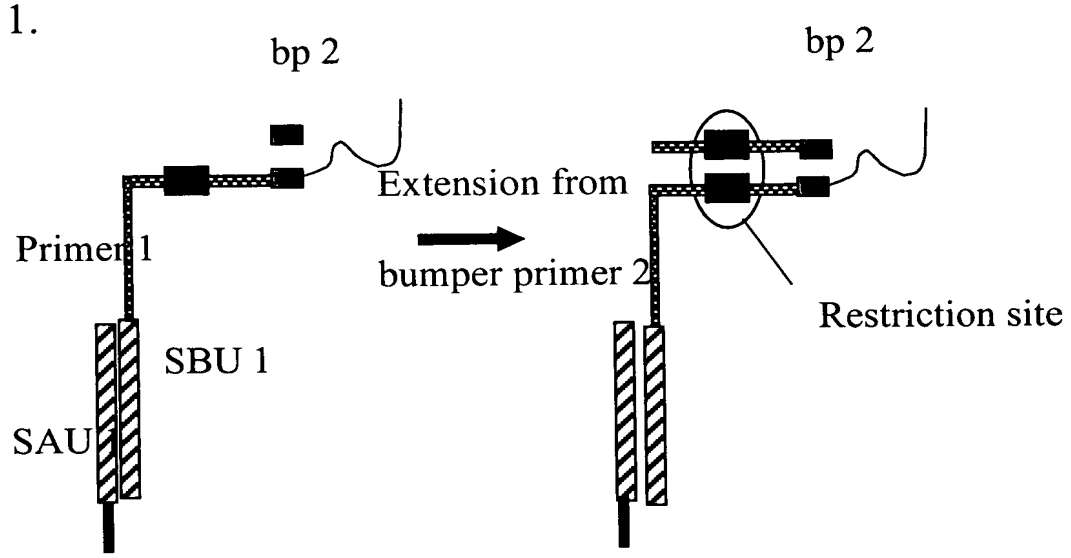


Fig. 27b

Phase 1: Initiation (continued)

C. Restriction site is activated in Primer 1.



D. Generate displaced S1 strands with target sequence

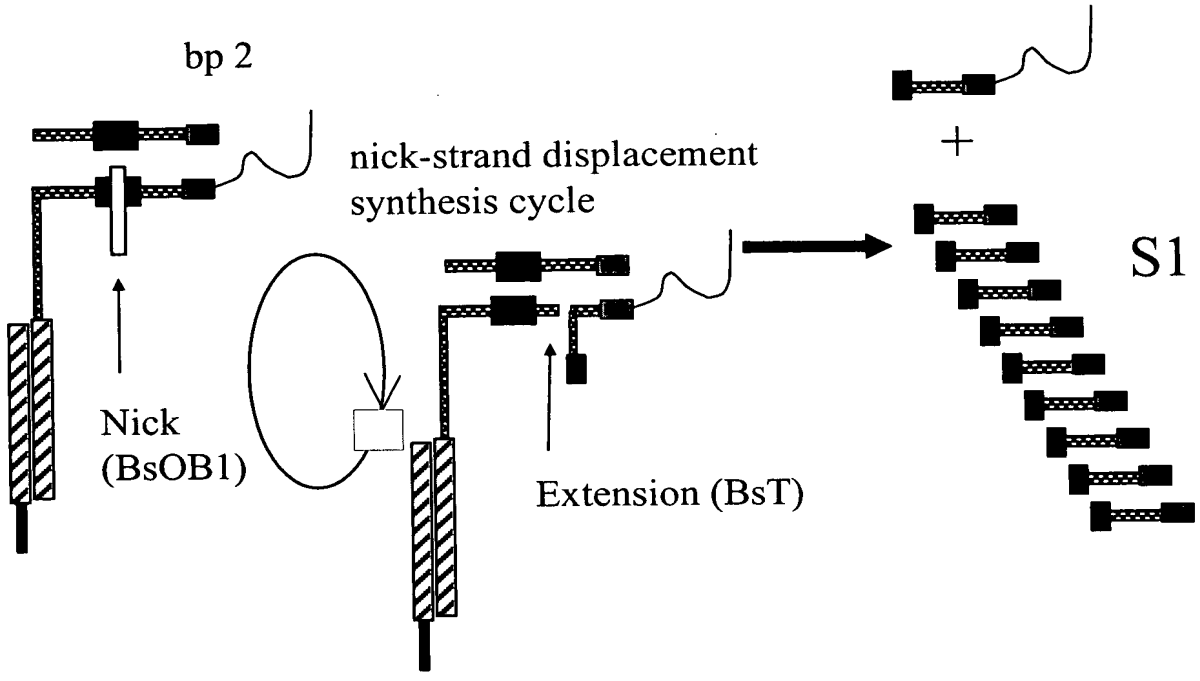
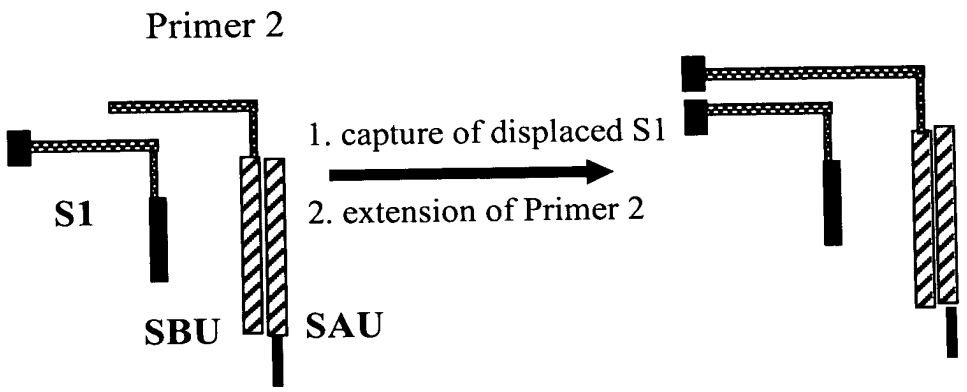


Fig. 27c

Phase 2: Linear Amplification via capture

A. One-for-one increase in anchored amplicon for every Phase 1 displaced strand captured



B. Generation of single stranded anchored amplicons

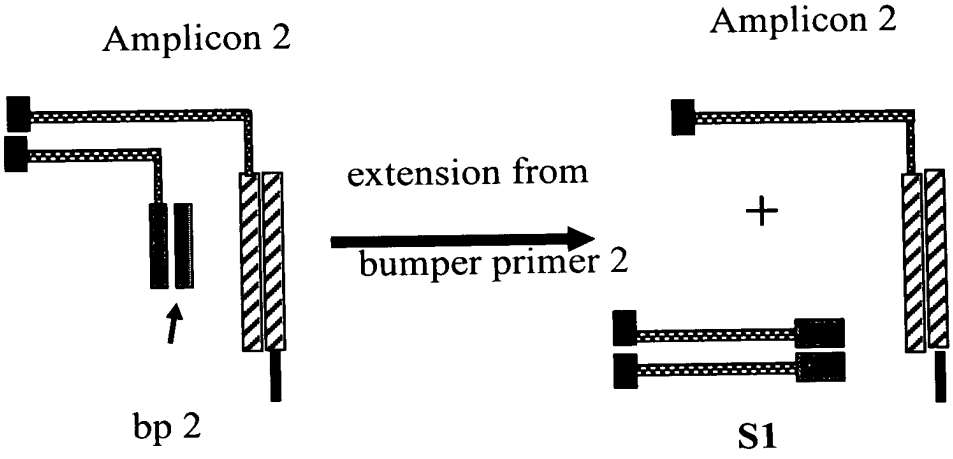
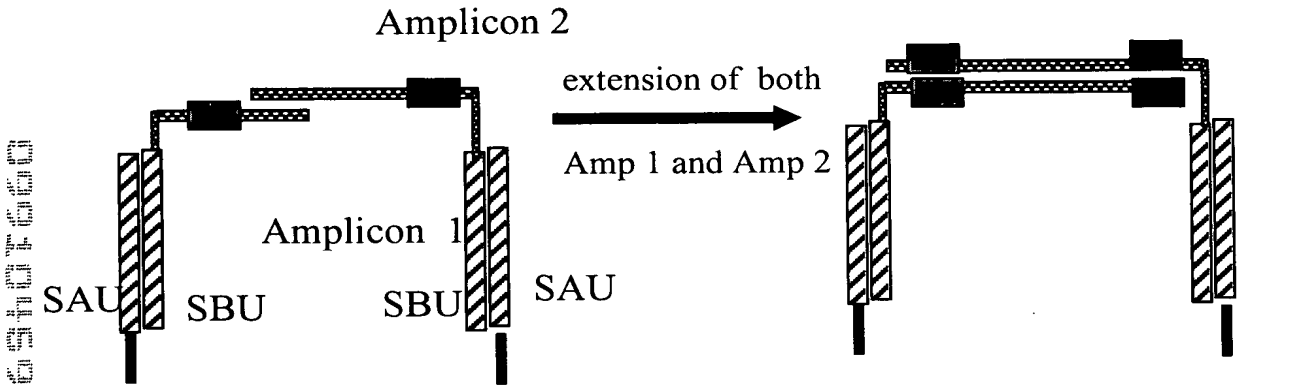


Fig. 27d

Phase 3: Exponential Amplification via bridging and capture

A. Activate restriction site in both anchored Amplicon 1 and anchored Amplicon 2



B. Generate S1 and S2 displaced strands with restriction site on both ends

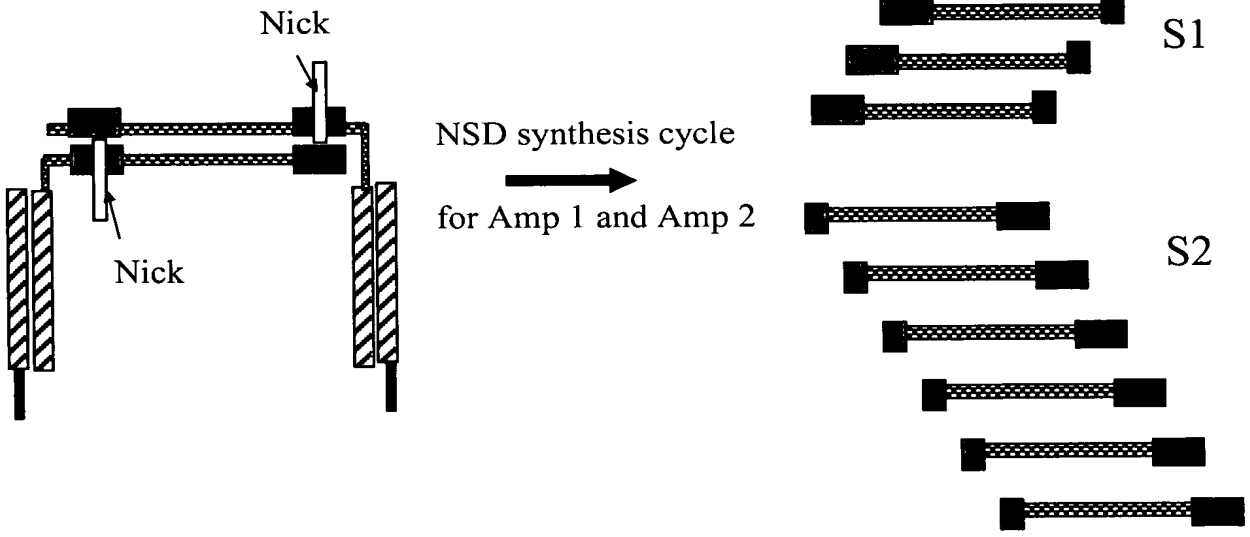


Fig. 27e

Phase 3: Exponential Amplification via bridging and capture (cont'd)

C. Establishes a link between displaced strand capture and activation of restriction site for
nicking and strand displacement synthesis cycle

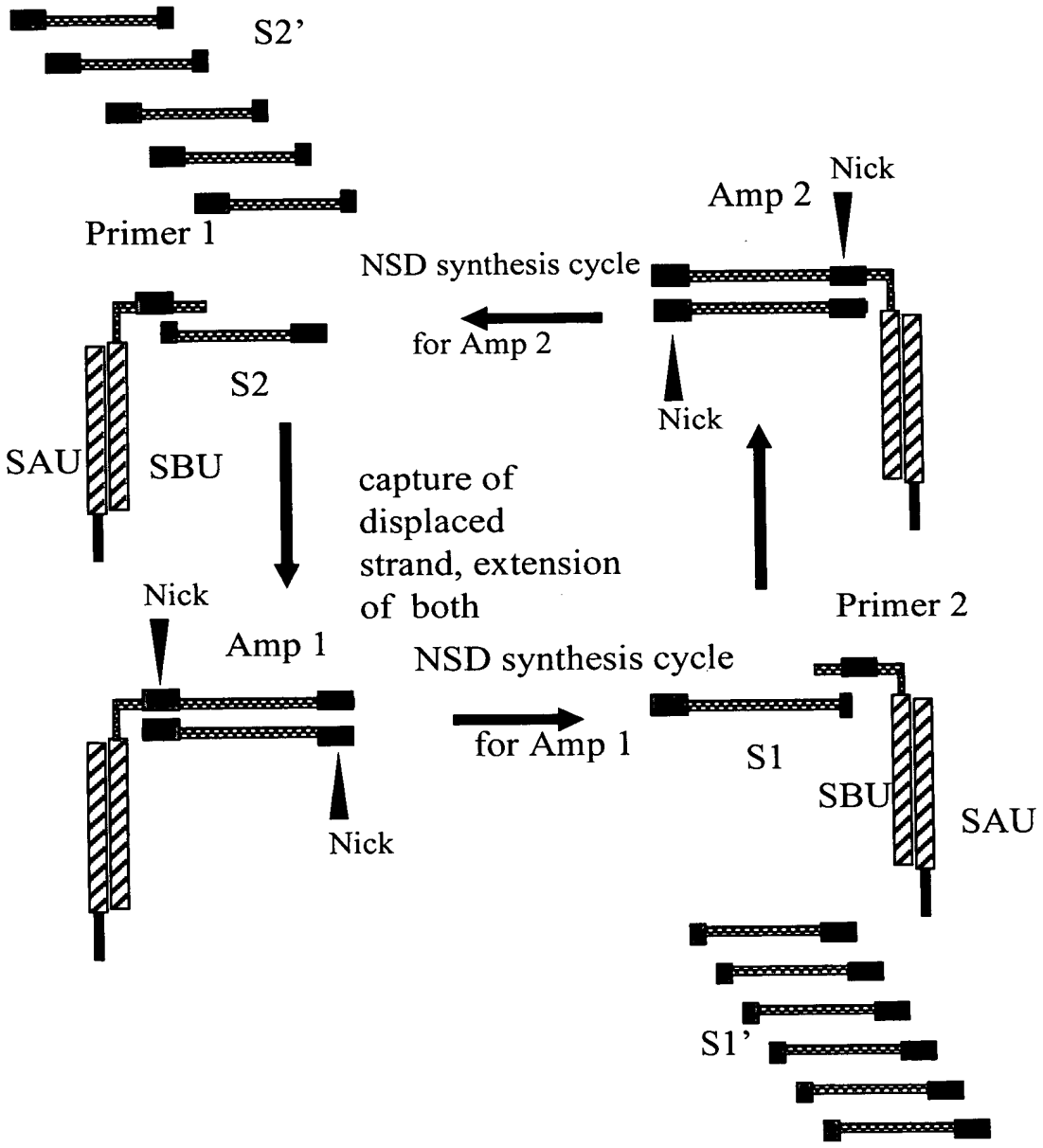
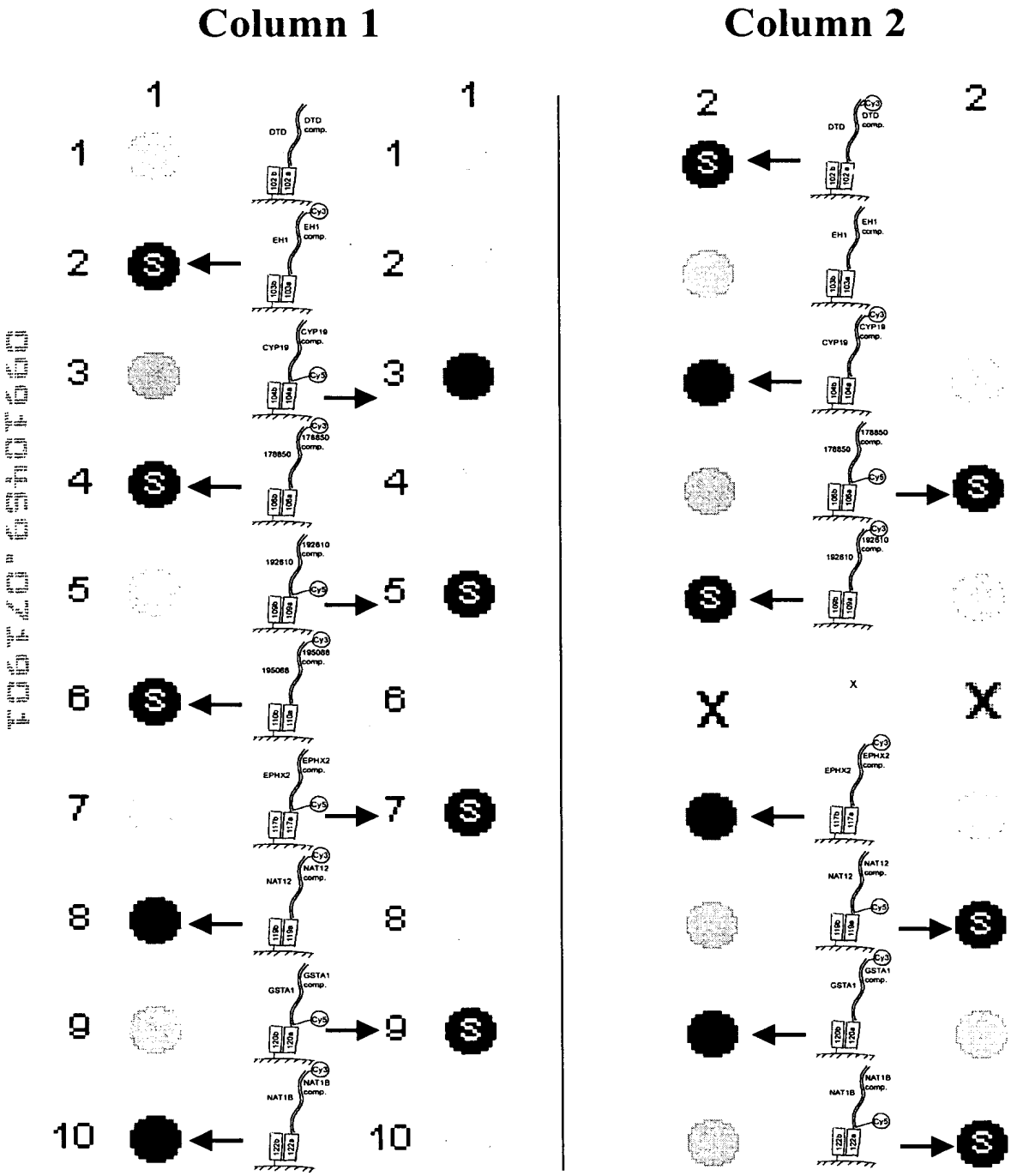


Fig. 28


Column 1
Column 2
1
2
3
4
5
6
7
8
9
10
X
DTD
EH1
CYP19
178850
192610
195086
EPHX2
NAT12
GSTA1
NAT1B